

**ADDITIONAL**

**PIONEER**

# *Service Manual*

**ORDER NO.  
ARP1061-A**

**FM/AM DIGITAL SYNTHESIZER TUNER**

**F-X55ZA(BK)**

**ZP**

**TX-555ZA(BK)**

**ZP**

- For servicing these types, please refer to the F-X55ZL (BK)/ZEB service manual (ARP1058) with the exception of this additional service manual.
- This additional service manual is applicable to the F-X55ZA (BK)/ZP and TX-555ZA (BK)/ZP types.
- F-X55ZA (BK)/ZP and TX-555ZA (BK)/ZP are provided with AM stereo demodulation circuit.

## 1. CONTRAST OF MISCELLANEOUS PARTS

### NOTES:

- Parts without part number cannot be supplied.
- The  $\triangle$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★ GENERALLY MOVES FASTER THAN ★  
This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by “●” are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

The F-X55ZA (BK)/ZP and TX-555ZA (BK)/ZP types are the same as the F-X55ZL (BK)/ZEB type with the exception of the following sections.

Mark	Symbol & Description	Part No.			Remarks
		F-X55ZL(BK)/ZEB	F-X55ZA(BK)/ZP	TX-555ZA(BK)/ZP	
	PVC panel Front panel Bonnet case Packing case Supplementary instructions Tuner assembly AM MPX assembly	AAK1009 AMB1002 ANE1003 AHD1008 ARH-051 GWE-270 ...	AAK1037 AMB1072 ANE1003 AHD1091 ARH-084 GWE-275 AWD-018	AAK1091 AMB1071 ANE1028 AHD1092 ARH-084 GWE-275 AWD-018	

## 2. ELECTRICAL PARTS LIST

### NOTES:

- When ordering resistors, first convert resistance values into code form as shown in the following examples.  
Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).  

560Ω	56 × 10 <sup>1</sup>	561.....	RD1/4PS 5 6 1 J
47kΩ	47 × 10 <sup>3</sup>	473.....	RD1/4PS 4 7 3 J
0.5Ω	0R5.....	RN2H 0 5 K	
1Ω	010.....	RSIP 0 1 0 K	
- Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).  

5.62kΩ	562 × 10 <sup>3</sup>	5621.....	RN1/4SR 5 6 2 1 F
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- The  $\triangle$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★ GENERALLY MOVES FASTER THAN ★  
This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by “●” are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

## MISCELLANEOUS PARTS

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
L1	Tuner assembly	GWE-275	F202	FM ceramic filter	ATF-107
	Switch assembly	Non supply	F201	FM ceramic filter	ATF-119
	LED assembly	Non supply	F401	AM ceramic filter	ATF1004
	AM MPX assembly	AWD-018			
	FM antenna	AHD-005			
	Loop antenna assembly	ATB-102			

## Tuner Assembly (GWE-275)

### SEMICONDUCTORS

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
★★ IC301	MPX IC	AN7470P	C117, C401		CCDCH080D50
★★ IC401	AM/FM IC	LA1260S	C115, C404, C717		CCDCH150J50
★★ IC702	PLL IC	TC9157AP	C116		CCDCH330J50
★★ IC701	PLL IC	TD6104P	C101, C102, C105, C106		CCDRH390J50
★★ IC703	DISPLAY IC	TD6301AP	C108		CCDSL020C50
★★ Q304, Q408, Q605, Q607		2SA1048 (2SA933S)	C109, C111, C112 C110, C426		CCDSL050C50 CCDSL101J50
★★ Q407		2SA933S	C119		CCDTH180J50
★★ Q401		2SC1740S	C422		CEANP4R7M35
★★ Q701, Q702		2SC1740SLN	C308, C427		CEASR22M50
★★ Q301 – Q303, Q402 – Q404, Q606, Q608, Q703 – Q707		2SC2458 (2SC1740S)	C425, C702, C709, C711, C712 C306, C705		CEAS010M50 CEAS1R5M50
★★ Q103, Q201		2SC2668	C418, C605, C607, C723		CEAS100M25
★★ Q102		2SC2786	C312, C313, C423		CEAS2R2M50
★★ Q104, Q105, Q406		2SK161 (2SK241)	C303, C604		CEAS221M16
★★ Q101		2SK241	C301, C302, C307, C701 C703		CEAS3R3M50 CEAS330M16
★ D405, D605		RD5.6EB (HZ5.6EB)	C406		CEAS4R7M50
★ D401, D402		SVC321C2/D2	C311, C414		CEAS470M25
★ D720		1SS131	C720		CEAS471M16
★ D301, D404, D406 – D410, D702 – D704, D707 – D709		1SS131	C714		CEAS471M6
★ D101 – D103		1SV147	C309, C310, C410, C411 C314, C315		CKCYB102K50 (CKDYB102K50) CKCYB472K50 (CKDYB472K50)

### SWITCHES

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
★★ S3 – S11, S15, S16	Tact switch ( STATION CALL, MEMORY ) ( AM, FM )	ASG-711 ( ASG-703 )	C305, C412, C413, C419, C710 C415		CKCYF473Z50 ( CKDYF473Z50 ) CKCYX473M25 ( CKDYX473M25 )

### COILS, TRANSFORMERS AND FILTERS

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
L401	AM OSC coil	ATB-110	C103, C121, C214, C402, C407, C408, CKDYF223Z50		
L101	FM ANT coil	ATC-192	C715, C719		
L102	FM ANT coil	ATC-193	C405		CQSA431J50
L103	FM OSC coil	ATC-214	C304		CQSA471J50
L202	FM DET coil	ATE-072			
L203	Inductor	ATH-116			
L104, L105, L201	Inductor	ATH-049			
T401	AM ANT transformer	ATB-099			
T402	AM IF transformer	ATB1002			
T101	FM RF transformer	ATC-194			
T102	FM matching transformer	ATE-063			

# F-X55ZA(BK)/ZP, TX-555ZA(BK)/ZP

## RESISTORS

*NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.*

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
★ VR301	Semi-fixed (4.7kΩ)	VRTB6VS472	L901	Inductor	ATH-116

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
★ VR401	Semi-fixed (220kΩ)	VRTB6VS224			

△	R601	Metal oxide	RS1LMF151J	C915	CCDCH470J50
	R720, C421	Resistor array	RA12S473J	C916, C917	CEASR47M50
	R404, R421, R431, R432		RD1/4PM□□□J	C902, C910	CEAS100M25
		Other resistors	RD1/8PM□□□J	C933	CEAS101M16
				C904, C911, C919, C931, C932	CEAS2R2M50
				C934, C936	CEAS220M25
				C935	CEAS330M16
				C903, C918, C920	CEAS4R7M50
				C912	CEAS470M10
				C909	CKCYB102K50
					(CKDYB102K50)

## OTHERS

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
	Terminal (ANTENNA) (PAL, 4P)	AKA1002			
	Socket (6P)	AKP-083		C906 – C908, C913	CKCYB332K50 (CKDYB332K50)
★ V1	Fluorescent tube	AAV-028		C929, C930	CKCYB222K50 (CKDYB222K50)
★ X701	Crystal resonator	ASS-025		C901, C905, C914	CKCYF103Z50
				C923 – C928	CQMA154J50

## Switch Assembly

### SWITCHES

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
★★ S12, S13	Tact switch (UP-DOWN)	ASG-711 (ASG-703)	★ VR901	Semi-fixed (22k)	VRTB6VS223

## LED Assembly

### SEMICONDUCTORS

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
★ D901	LED (STEREO)	AEL-382	★ X901	Ceramic resonator	ASS-045
★ D902	LED (TUNED)	AEL-424			

## AM MPX Assembly (AWD-018)

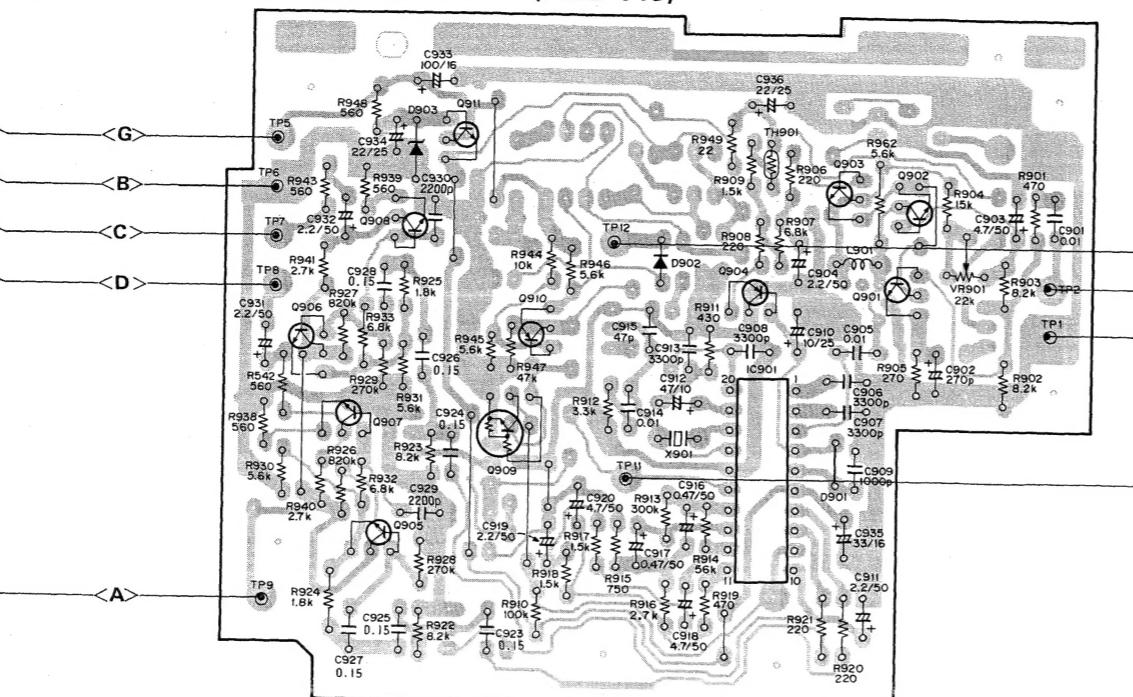
### SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★ IC901		MC13020P
★★ Q904, Q910		2SA933S (2SA1115)
★★ Q902, Q903, Q905 – Q908, Q911		2SC1740S (2SC2603)
★★ Q901		2SC2668
★★ Q909		2SC3400
★ D903		RD9.1EB (HZ:9.1EB)
★ D902		1SS131
★ TH901		TH103

1      2      3      4      5      6  
**3. P. C. BOARDS CONNECTION DIAGRAM**

A

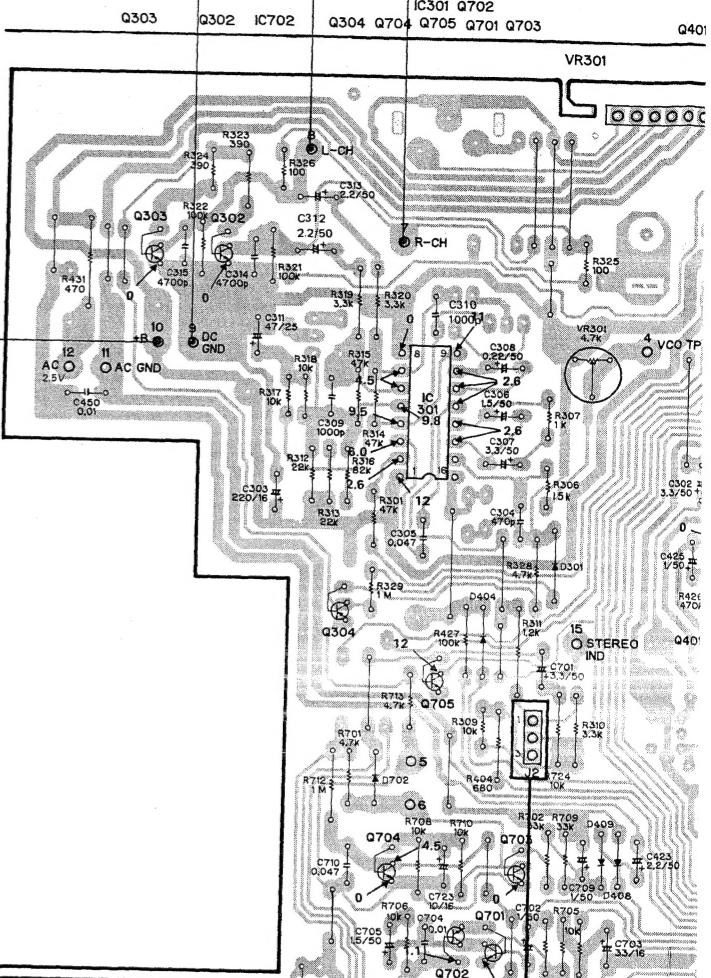
AM MPX ASSEMBLY (AWD-018)



IC901	MC1302OP	D902	ISS131
Q901	2SC2668	D903	RD9.1EB
Q902, 903, 905-908,	2SC1740S (2SC2603)	TH901	(HZ9.1EB)
911		TH103	
Q904, 910	2SA933S (2SA1115)		
Q909	2SC3400		

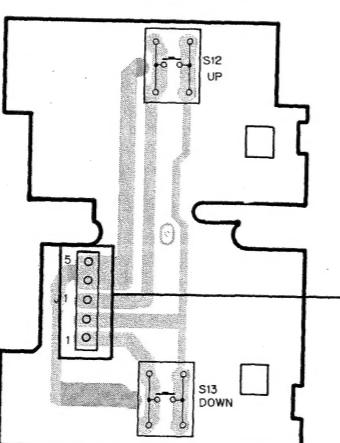
B

TUNER ASSEMBLY (GWE-275)

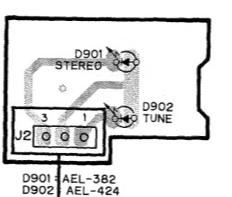


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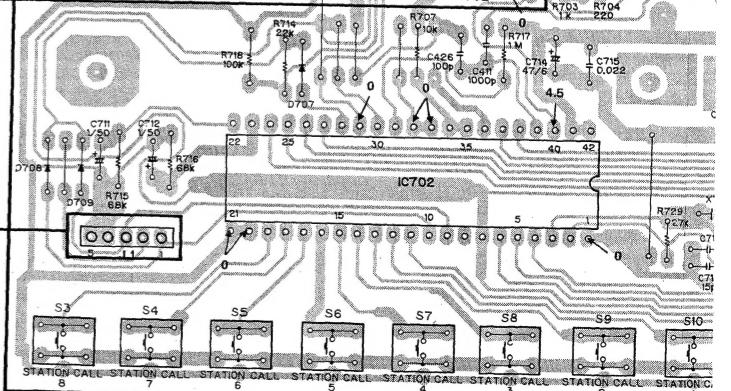
SWITCH ASSEMBLY



LED ASSEMBLY

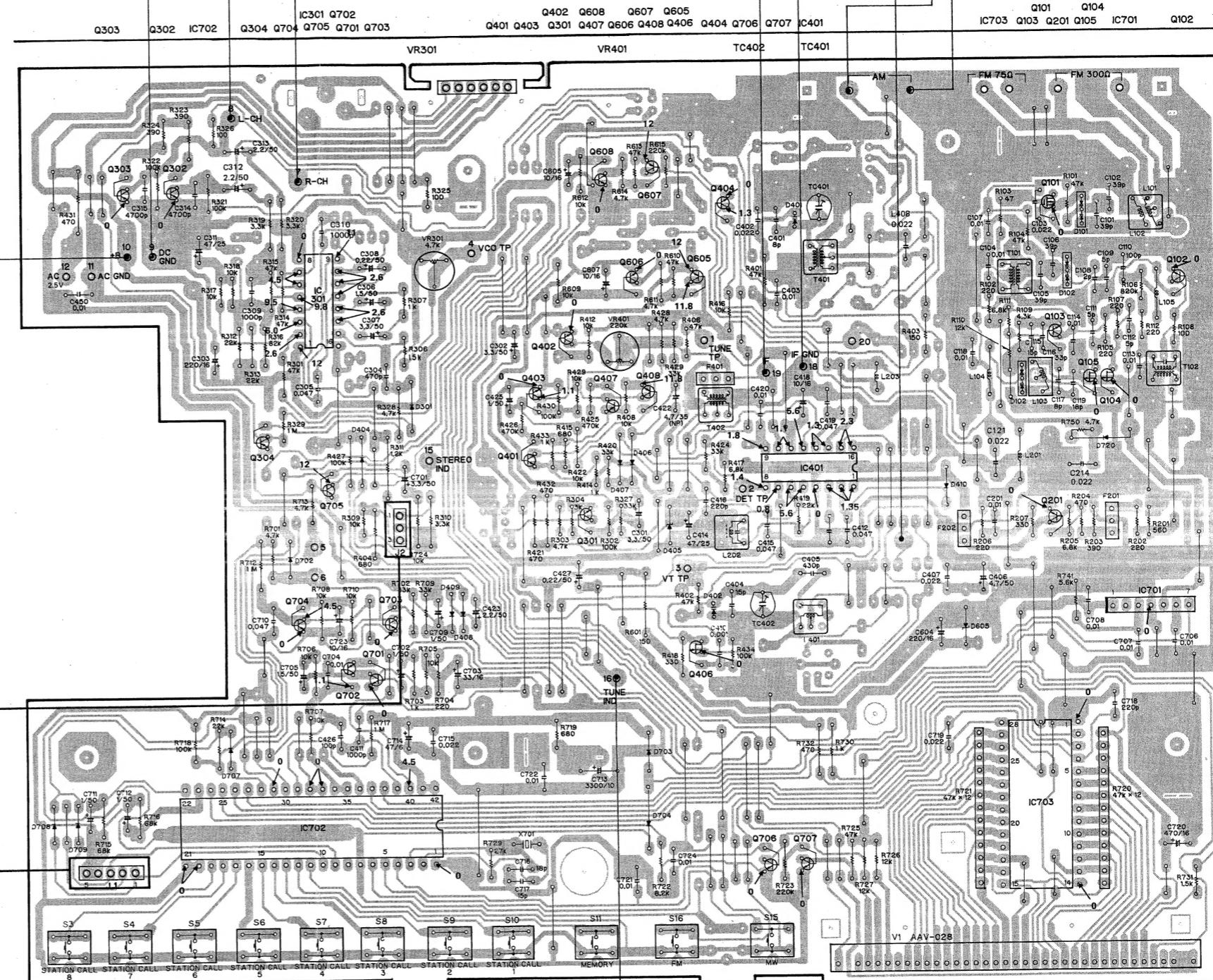
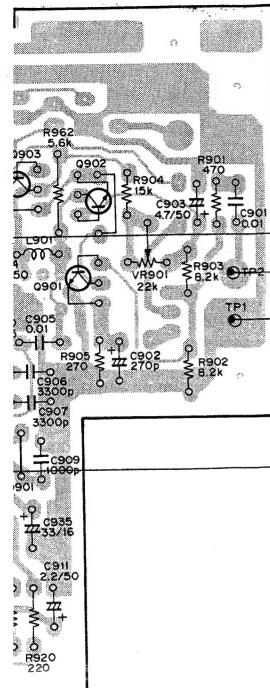


D



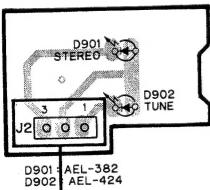
IC301: AN7470P or AN7470  
 Q301~303, 402~404, 606, 608, 703~707 : 2SC2458 or 2SC1740S  
 D101~103 : 1SV147  
 IC401 : LA126DS  
 Q301, 404, 406~410, 702~704, 707~709, 720 : 15S131  
 IC701 : TD6104P  
 D301, 404, 406~410, 702~704, 707~709, 720 : 15S131  
 IC702 : TC9157AP  
 Q304, 408, 605, 607 : 2SA1048 or 2SC321C/D  
 IC703 : TD6301A  
 D401, 402 : SVC321C/D

## **TUNER ASSEMBLY (GWE-275)**



**AM LOOP  
ANTENNA ASSEMBLY  
ATB-102**

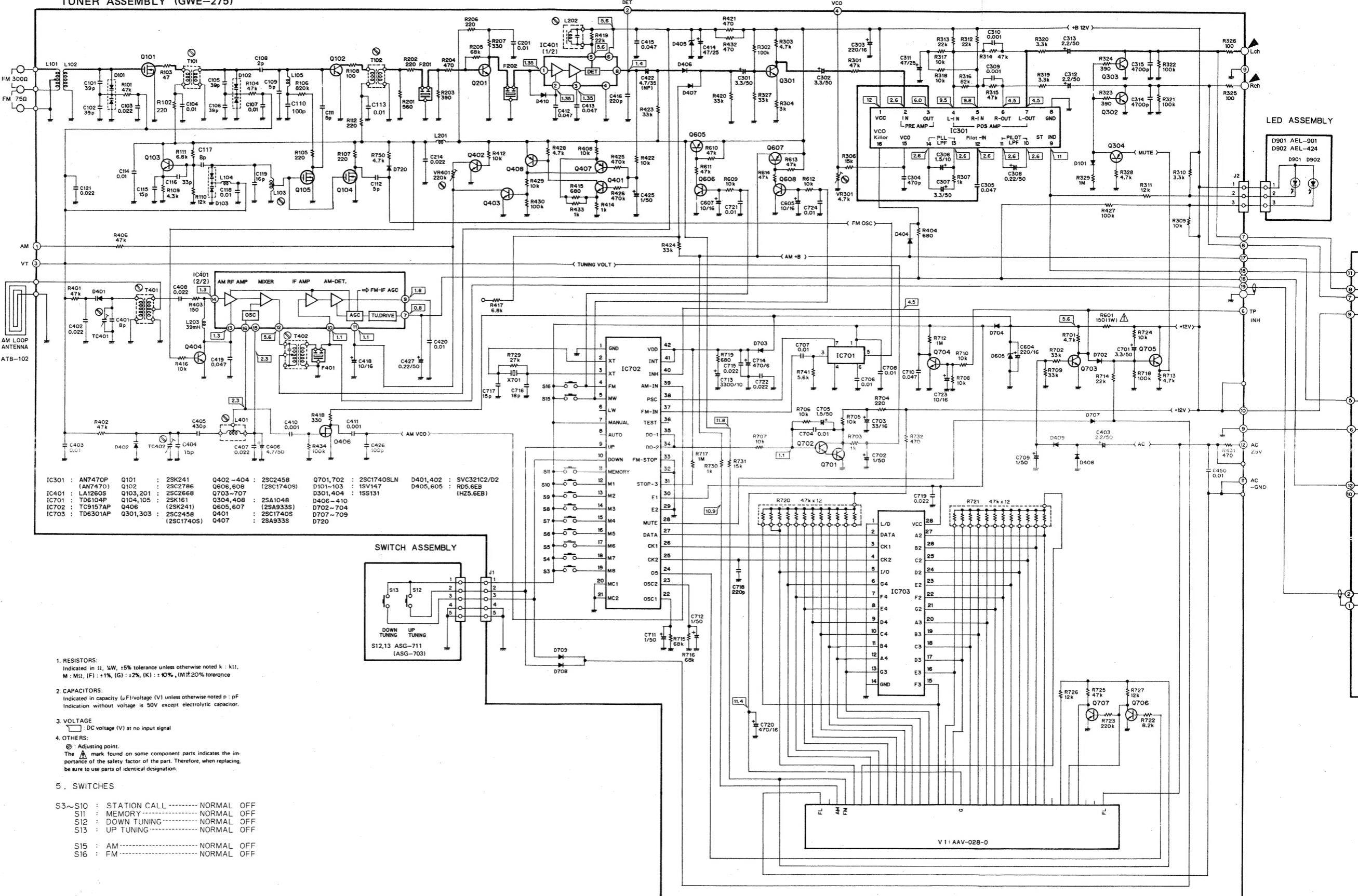
## LED ASSEMBLY



IC301 : AN7470P or AN7470 IC401 : LA1260S IC701 : TD6104P IC702 : TC9157AP IC703 : TD6301AP Q101 : 2SK241 Q102 : 2SC2786 Q103, 201 : 2SC2668 Q104, 105, 406 : 2SK161 or 2SK241  
Q301~303, 402~404, 606, 608, 703~707 : 2SC458 or 2SC105S Q304, 408, 605, 607 : 2SA1048 or 2SA933S Q401 : 2SC1740S Q402 : 2SA933S Q701, 702 : 2SC1740SLN  
D001~103 : V1M147 D301, 404 : 406~410, 702~704, 707~709, 720 : IS131 D401, 402 : SVC321C2/D2 D405, 605 : 605~608EB or ZH5.6ZB

## 4. SCHEMATIC DIAGRAM

TUNER ASSEMBLY (GWE-275)



4

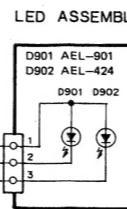
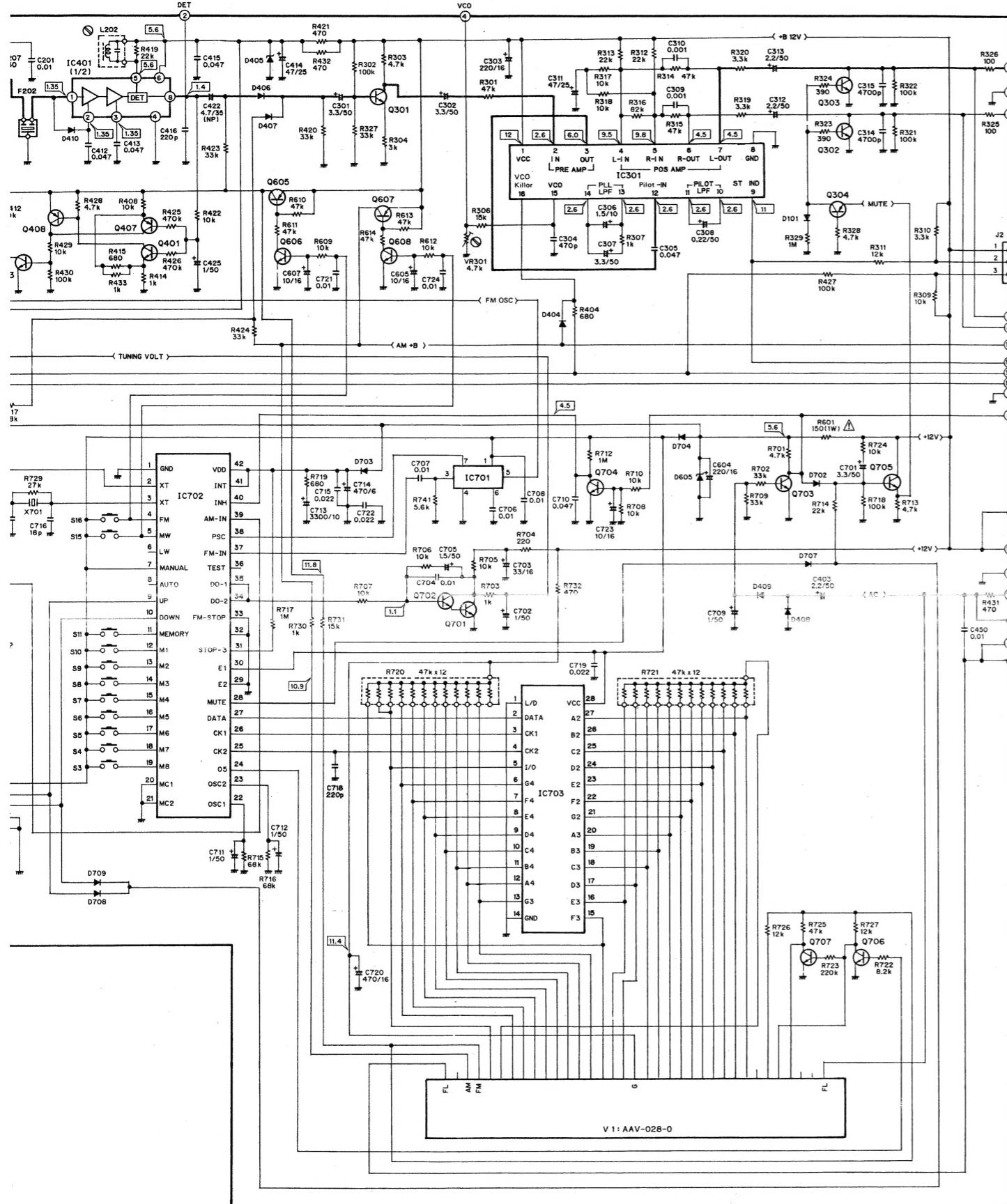
5

6

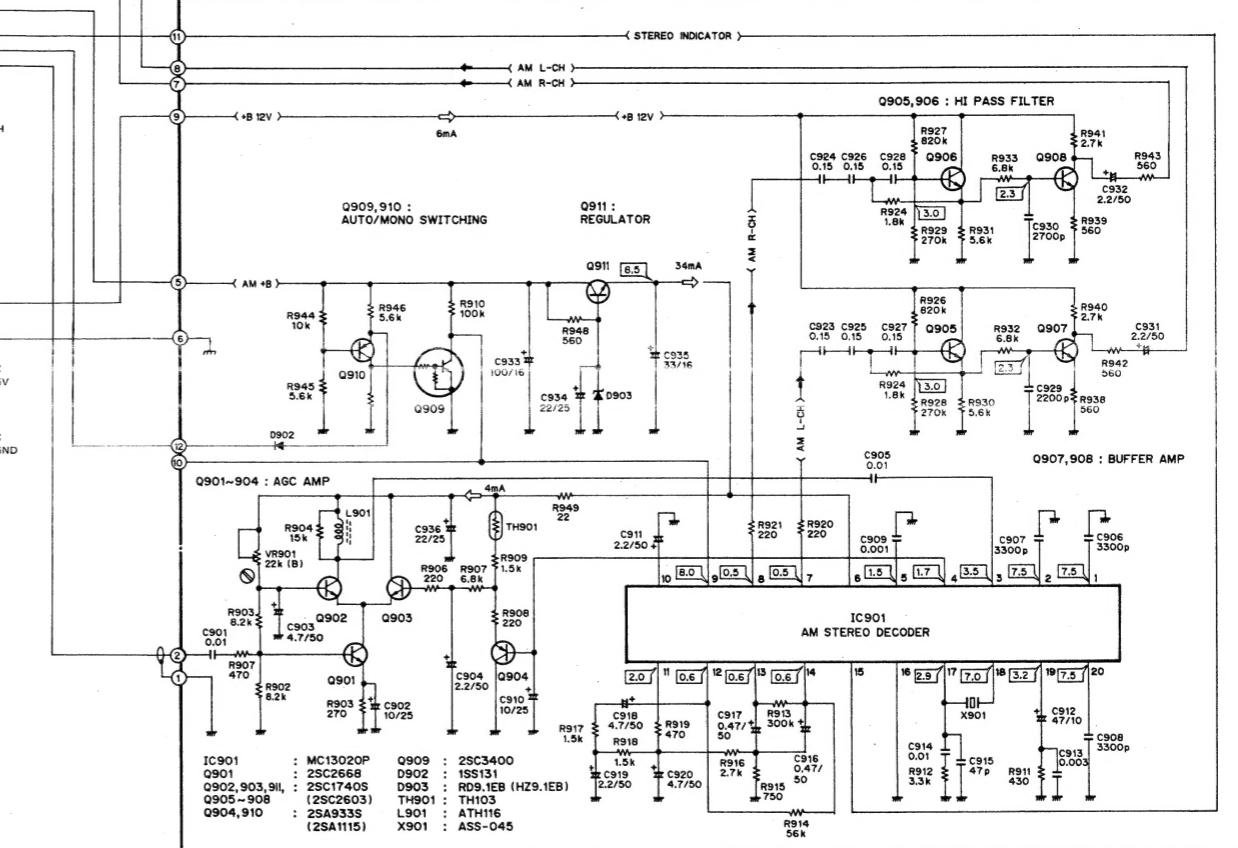
7

8

9



AM MPX ASSEMBLY (AWD-018)



*NOTE:*

The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.

4

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## 5. ADJUSTMENTS

- For servicing these types, please refer to the F-X55ZL (BK) adjustments in service manual (ARP1058: from page 17 to 22) with the exception of this adjustment.

### • AM (MW) Tuner Section Adjustment

Step No.	AM SG (400 Hz, 30% modulation)		TX-555ZA (BK) F-X55ZA (BK) tuned frequency display	Adjustment	
	Frequency (kHz)	Level (dB)		Adjustment location	Specifications
1	No input signal	531 kHz	L401	Set pin 3 of tuner assembly to 1.3V ( $\pm 0.1$ V).	
2		1602 kHz			Set pin 3 of tuner assembly to 10.0V ( $\pm 0.3$ V).
3	Repeat steps 1 and 2 until both specification ratings are satisfied.				
4	603	40	603 kHz	T401	Set the output from pin 1 of the tuner assembly to maximum level.
5	1395	40	1395 kHz	TC401	
6	Repeat steps 4 and 5 until both specification ratings are satisfied.				
7	—	100	—	VR901*	Set the output level of AM MPX assembly to -16.5 dB $\pm 1$ dB.
8	1395	Variable	1395 kHz	Check that the TUNING indicator comes on when the AM SG level is gradually increased.	

\*VR901 is in AM MPX assembly (AWD-018) (See Fig. 5-1)

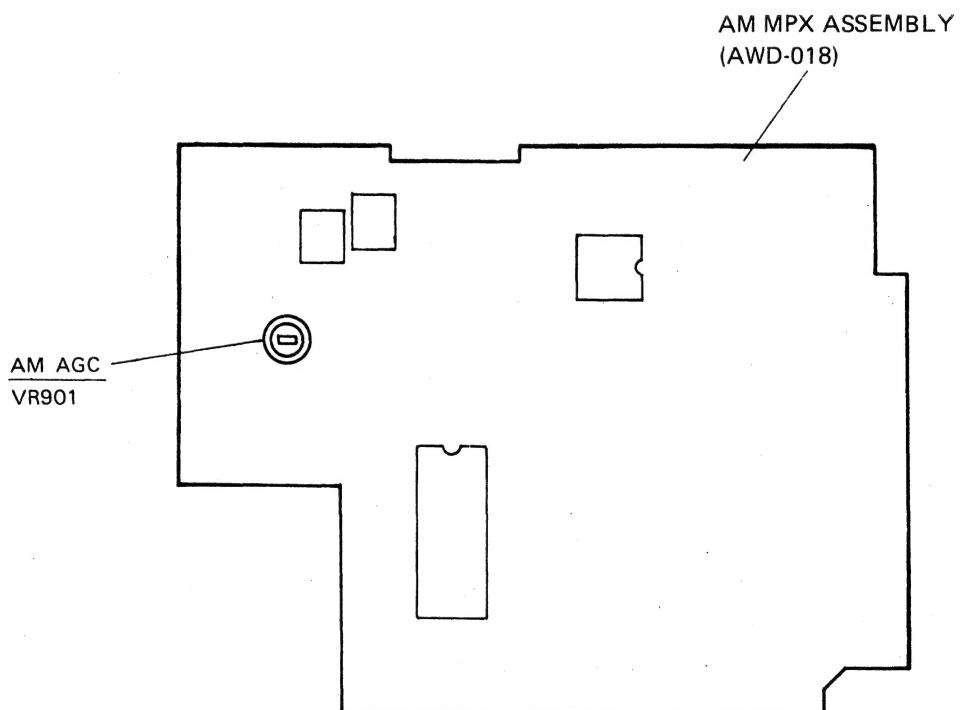


Fig. 5-1 Adjustment position



# Service Manual

**CIRCUIT DESCRIPTIONS  
REPAIR & ADJUSTMENTS**



**ORDER NO.  
ARP1058-0**

FM/AM DIGITAL SYNTHESIZER TUNER

**F-X55ZL(BK)**  
**F-X55ZL**

- MODELS F-X55ZL (BK), F-X55Z (BK), F-X55ZA (BK) AND F-X55ZL COME IN FIVE VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Applicable model				Power requirement	Export destination
	F-X55ZL	F-X55ZL(BK)	F-X55Z(BK)	F-X55ZA(BK)		
ZEB	○	○	—	—	(DC power supply)	European continent and United Kingdom
ZUC	—	—	○	—	(DC power supply)	U.S.A and Canada
Z	—	—	○	—	(DC power supply)	European continent
ZEZ	—	—	○	—	(DC power supply)	West Germany
ZP	—	—	—	○	(DC power supply)	Australia

- This service manual is applicable to the ZEB type.
- As to the F-X55Z (BK)/ZUC and Z, please refer to the additional service manual (ARP1059).
- F-X55ZL is the same as the F-X55ZL (BK) except for the exterior design (color).
- F-X55ZL is silver version of F-X55ZL (BK).
- The AM tuner of the F-X55ZL (BK) is a two wave-band tuner with MW (medium wave) and LW (long wave), but the F-X55Z (BK) is MW only.
- As to the F-X55Z (BK)/ZEZ type, please refer to the additional service manual (ARP1060).
- As to the F-X55ZA (BK)/ZP type, please refer to the additional service manual (ARP1061).
- Model F-X55ZA (BK) has the same configuration as model F-X55ZL (BK) except that the former equipped with AM stereo circuitry rather than LW (long wave) circuitry.
- Ce manuel d'instruction se réfère au mode de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.

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**PIONEER ELECTRONICS AUSTRALIA PTY. LTD.** 178-184 Boundary Road, Braeside, Victoria 3195, Australia  
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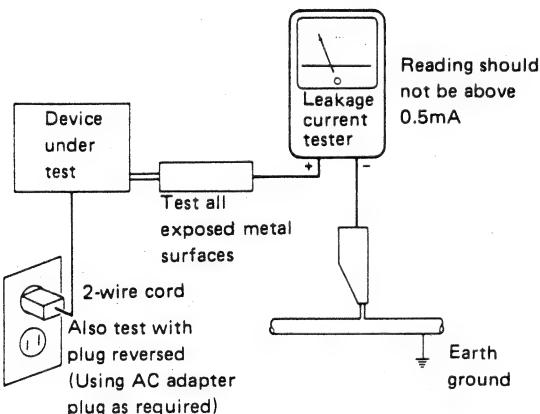
# 1. SAFETY INFORMATION

## 1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

### LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

## 2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

## 2. SPECIFICATIONS

### FM Tuner Section

Frequency range	87.5 MHz to 108 MHz
Usable Sensitivity	11.2 dBf, IHF (1.0 $\mu$ V/75 ohms)
Sensitivity (DIN)	Mono: 0.9 $\mu$ V/75 ohms Stereo: 31.5 $\mu$ V/75 ohms
Signal-to-Noise Ratio (IHF, 85 dBf Input)	Mono: 77 dB Stereo: 73 dB
Signal-to-Noise Ratio (DIN)	Mono: 66 dB Stereo: 60 dB
Distortion	Stereo: 0.4% (1 kHz)
Alternate Channel Selectivity	67 dB (400 kHz)
Stereo Separation	40 dB (1 kHz)
Antenna Input	300 ohm balanced 75 ohm unbalanced

### MW (AM) Tuner Section

Frequency range	530 kHz to 1600 kHz when 10 kHz step 531 kHz to 1602 kHz when 9 kHz step
Sensitivity (IHF, Loop antenna)	300 $\mu$ V/m
Signal-to-Noise Ratio	50 dB
Antenna	Loop Antenna

### LW Tuner Section (For LW-equipped models only)

Frequency range	153 kHz to 281 kHz
-----------------	--------------------

### Miscellaneous

Dimensions	360(W) x 56(H) x 215(D) mm 14-3/16(W) x 2-3/16(H) x 8-7/16(D) in
Weight (without package)	1.8 kg (4 lb)

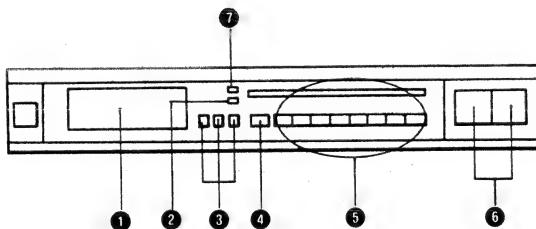
### Furnished Parts

FM T-type Antenna	1
AM Loop Antenna	1
Tuner input/output cord	1

### NOTE:

Specifications and the design subject to possible modifications without notice due to improvements.

## 3. PANEL FACILITIES



### NOTE:

The illustration is of the model for use in continental Europe and the U.K.

#### ① FREQUENCY display

Permits reading the received frequency at a glance from the displayed figure. The FM band is indicated by MHz, and the AM (MW or LW) band by kHz.

#### ② STEREO indicator

This lights when a stereo program has been picked up during an FM broadcast.

#### ③ FUNCTION switch

MW: Push to receive MW band broadcasts.  
LW: Push to receive LW band broadcasts.  
FM: Push to receive FM band broadcasts.

Only AM/FM switching is available for the other models.

#### ④ MEMORY switch

Push to operate the memory circuit. After the switch is pressed, the memory circuit will function for about ten seconds. During this time, press one of the STATION CALL switches to memorize the station being currently received. If more than ten seconds elapse after the MEMORY switch is pressed, no stations can be memorized. In this case, press the MEMORY switch again if you wish to memorize a station.

#### ⑤ STATION CALL switches

These are used to preset and recall broadcasting stations. A total of 16 stations can be preset [FM: 8, AM (MW or LW): 8].

- To tune in to a prememorized station, push the appropriate STATION CALL switch.
- Once the stations have been preset, all you have to do to recall them is push the STATION CALL switch.

#### ⑥ TUNING switches

These are used to locate the stations. Push either of these two switches; the left switch “-” to go to a lower, and the right switch “+” to go to a higher frequency.

#### ⑦ TUNED indicator

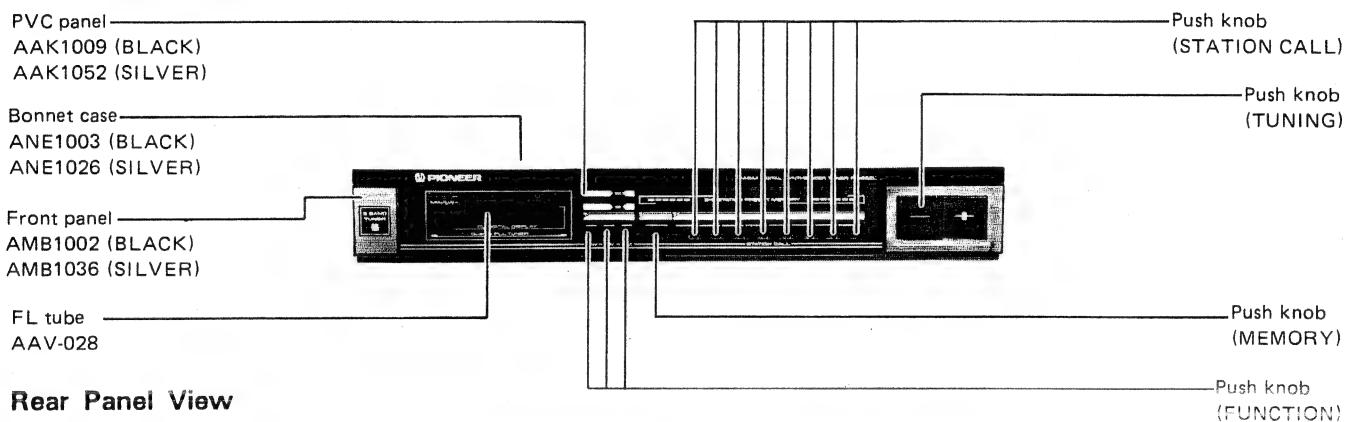
This lights to indicate when the finest tuning of a station has been achieved.

## 4. PARTS LOCATION

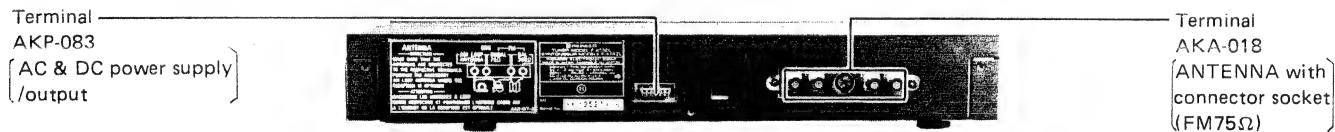
### NOTES:

- Parts without part number cannot be supplied.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★ GENERALLY MOVES FASTER THAN ★  
This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by “●” are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

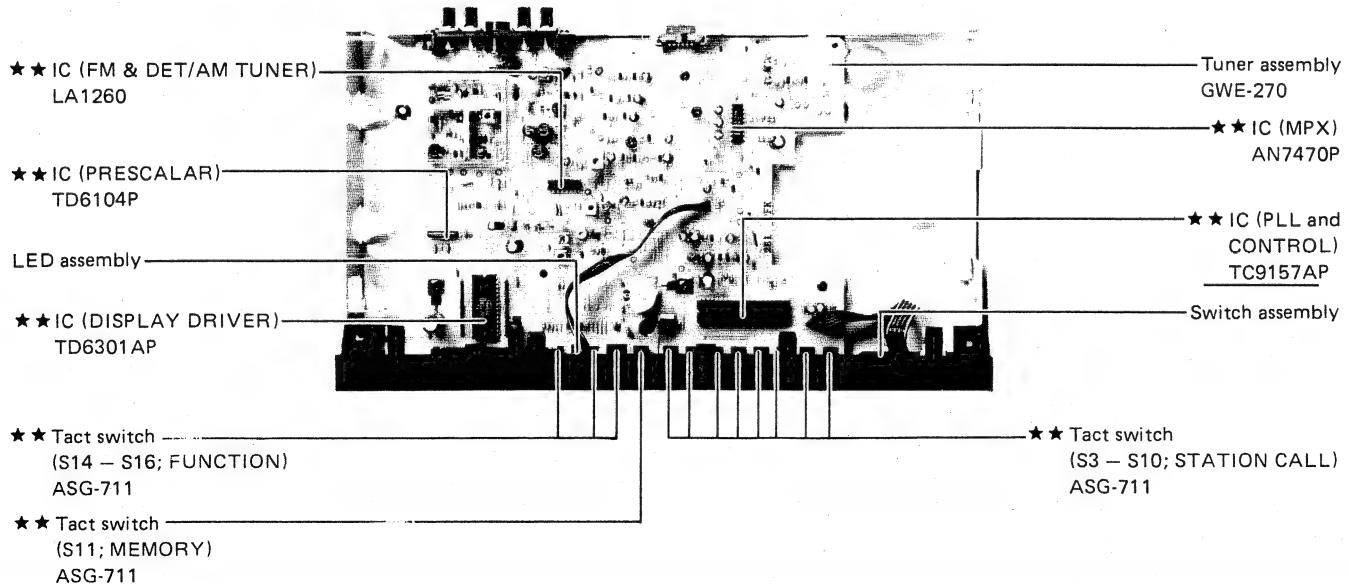
### Front Panel View



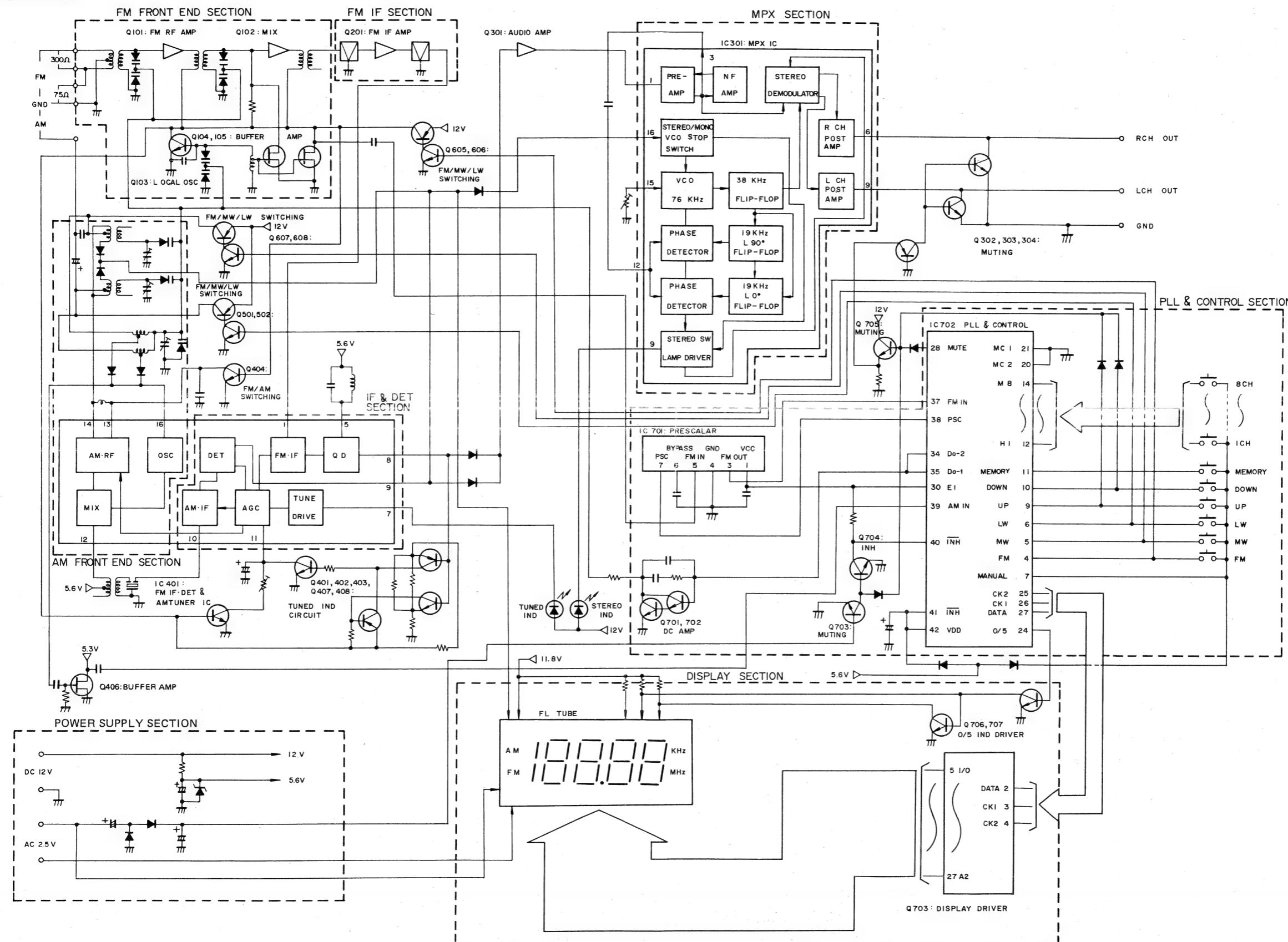
### Rear Panel View



### Top View



## 5. BLOCK DIAGRAM



## 6. IC DESCRIPTION

### • IC (LA1260) PIN DESCRIPTION

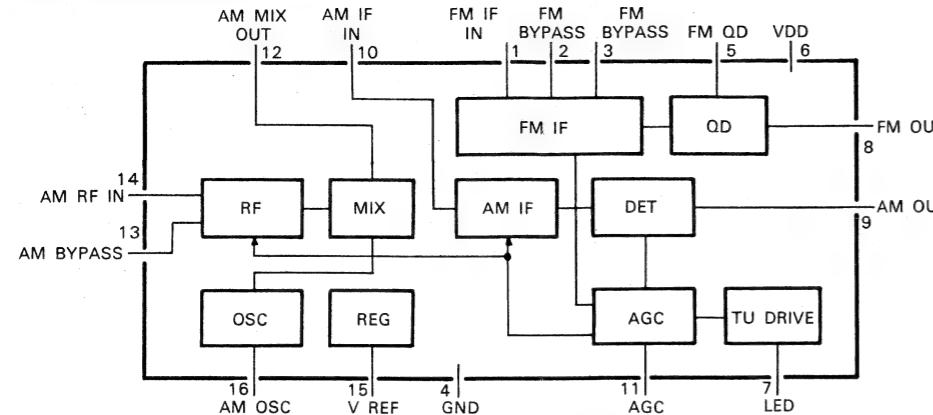


Fig. 6-1 LA1260 Block diagram

Pin No.	Pin Name	Pin No.	Pin Name
1	FM-IF input	9	AMDET output
2	FM bypass capacitor connection	10	AM-IF input
3		11* <sup>2</sup>	AM mix output
4	GND	12* <sup>3</sup>	AM mix output
5	FM DET coil connection	13* <sup>4</sup>	AM bypass capacitor connection
6	VCC	14	AM RF input
7* <sup>1</sup>	LED drive terminal (TUNED)	15	Regulator output
8	FM DET output	16	AM OSC connection

- \*1: Active low.
- \*2: TUNED IND cannot be driven when the voltage of this pin becomes less than 0.9V. Accordingly, LED does not light up.
- \*3: Pin 12 is turned to FM when it is opened. When the electric potential of pin 12 is made the same as pin 6 by direct current, the AM circuit is switched ON by the internal switch.
- \*4: Pin 13 is turned to AM when it is opened. When pin 13 is grounded, the FM circuit is switched ON by the internal switch and AM circuit is switched OFF. At this time, pin 12 is connected in the same electric potential with pin 6.

### • IC (AN7470P) PIN DESCRIPTION

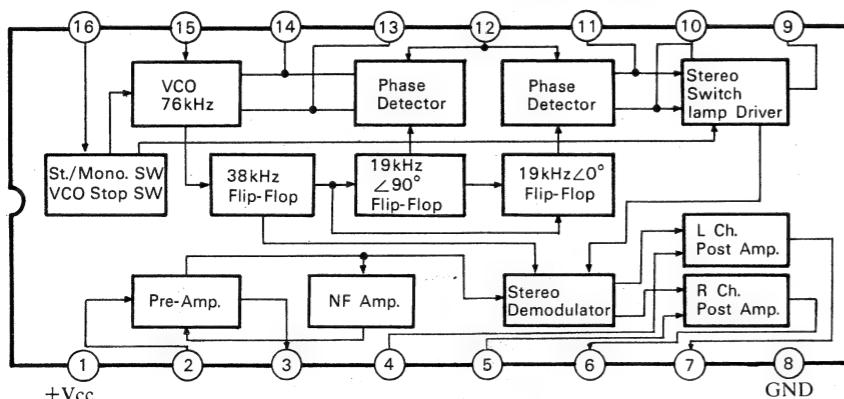


Fig. 6-2 AN7470P Block diagram

Pin No.	Pin Name	Pin No.	Pin Name
1	VCC	9* <sup>1</sup>	Stereo Indicator and VCO Freq. Monitor
2	Composite Sig. Input	10, 11	Pilot Det. Low-pass Filter
3	Buffer Amp. Output	12	Pilot Signal Input
4	L Ch. Amp. Feedback	13	PLL Low-pass Filter
5	R Ch. Amp. Feedback	14	PLL Low-pass Filter
6	R Ch. Amp. Output	15	VCO RC Time Const
7	L Ch. Amp. Output	16* <sup>2</sup>	Forced Mono. VCO Killer

- \*1: Active low.
- \*2: VMO: ST-MONO switching voltage  
VVCO: VCO stop voltage

- ① STEREO-MONO automatic switching
- ② Compulsory MONO
- ③ VCO stop

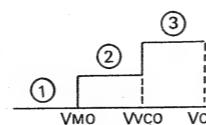
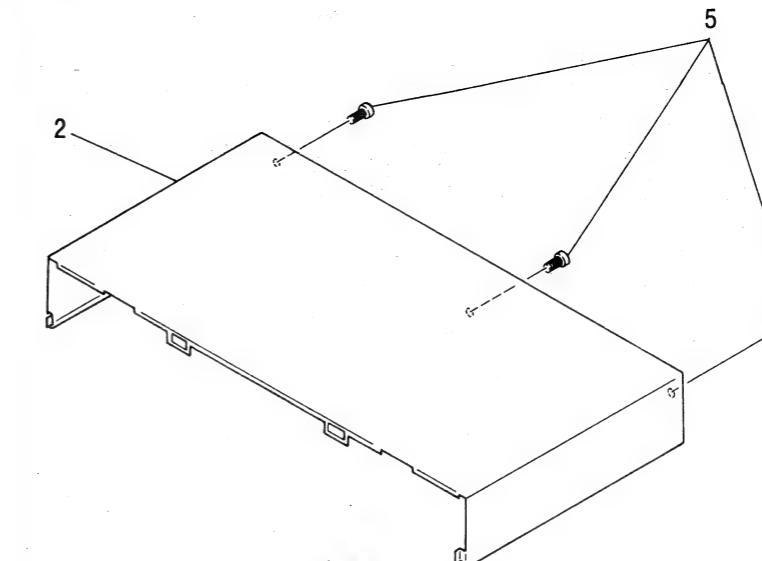


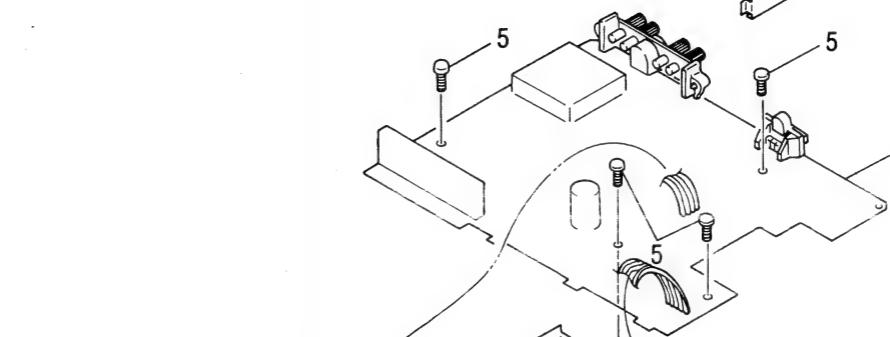
Fig. (a) Input applied to pin 16 of AN7470P

## 7. EXPLODED VIEW

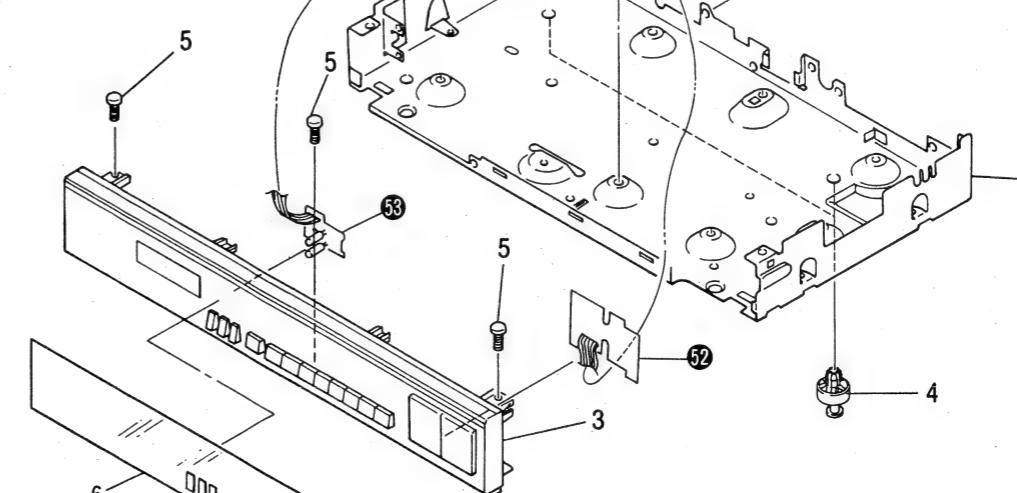
A



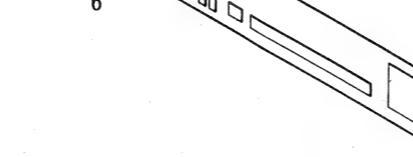
B



C



D



1

2

3

A

B

C

D

1

2

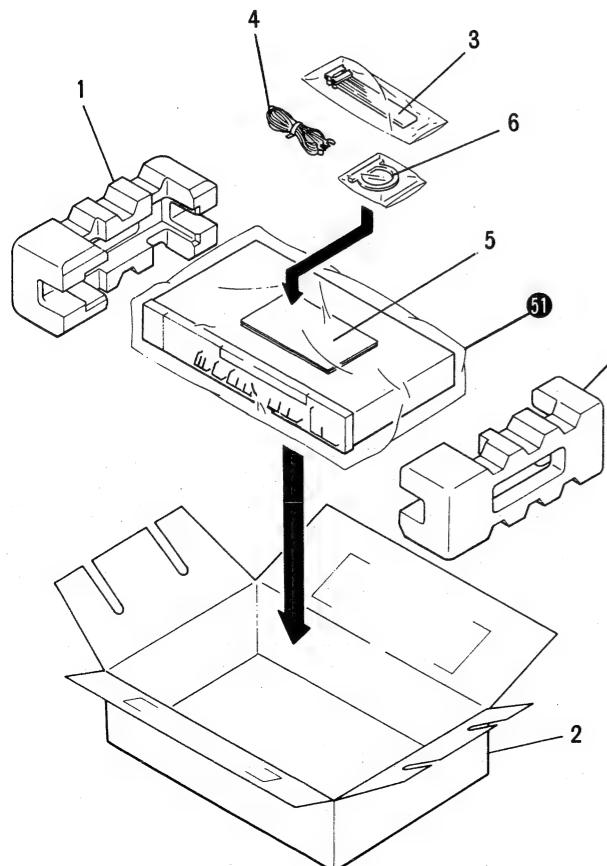
3

**NOTES:**

- Parts without part number cannot be supplied.
- The  $\triangle$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★ GENERALLY MOVES FASTER THAN ★  
This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

**Parts List of Exploded View**

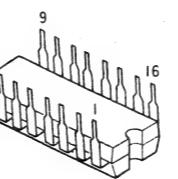
Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
1.	GWE-270	Tuner assembly		51.			Chassis
2.	ANE1003	Bonnet case (BLACK)		52.			Switch assembly
	ANE1026	Bonnet case (SILVER)		53.			LED assembly
3.	AMB1002	Front panel (BLACK)					
	AMB1036	Front panel (SILVER)					
4.	AMR1002	Leg assembly					
5.	BBZ30P080FZK	Screw					
6.	AAK1009	PVC panel (BLACK)					
	AAK1052	PVC panel (SILVER)					

**8. PACKING****Parts List**

Mark	No.	Part No.	Description
1.	AHA-376	Side pad	
2.	AHD1008	Packing case (BLACK)	
	AHD1043	Packing case (SILVER)	
3.	ADE-088	Connection cord	
4.	ADH-005	FM antenna	
5.	ARH-051	Supplementary instructions	
6.	ATB-102	Loop antenna assembly	
51.		Vinyl sheet	

**External Appearance of Transistors and ICs**

AN7470P  
AN7470  
LA1260



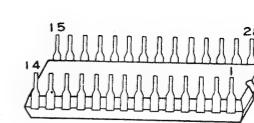
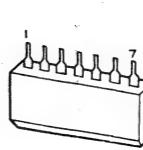
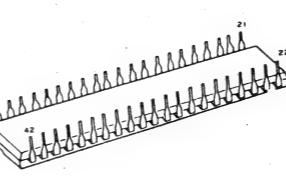
TC9157AP

TD6104P

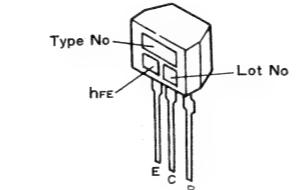
TD6301AP

TD6104P

TD6301AP

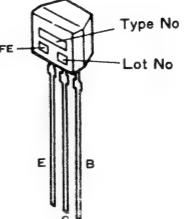
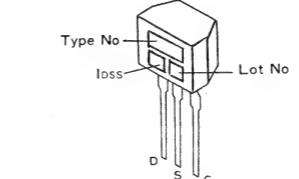


2SA933S  
2SC1740S  
2SC2668



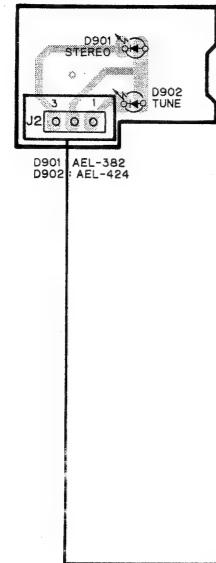
2SK161-Y  
2SK241-Y

2SC2786-L

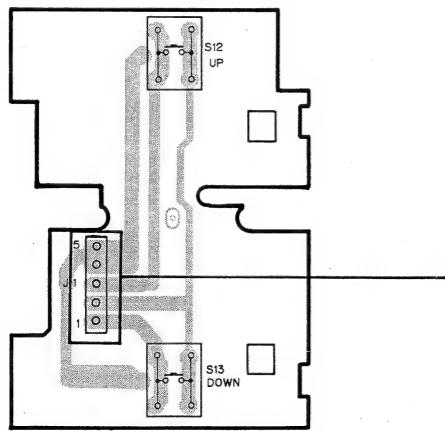


## 9. P. C. BOARDS CONNECTION DIAGRAM

LED ASSEMBLY



SWITCH ASSEMBLY

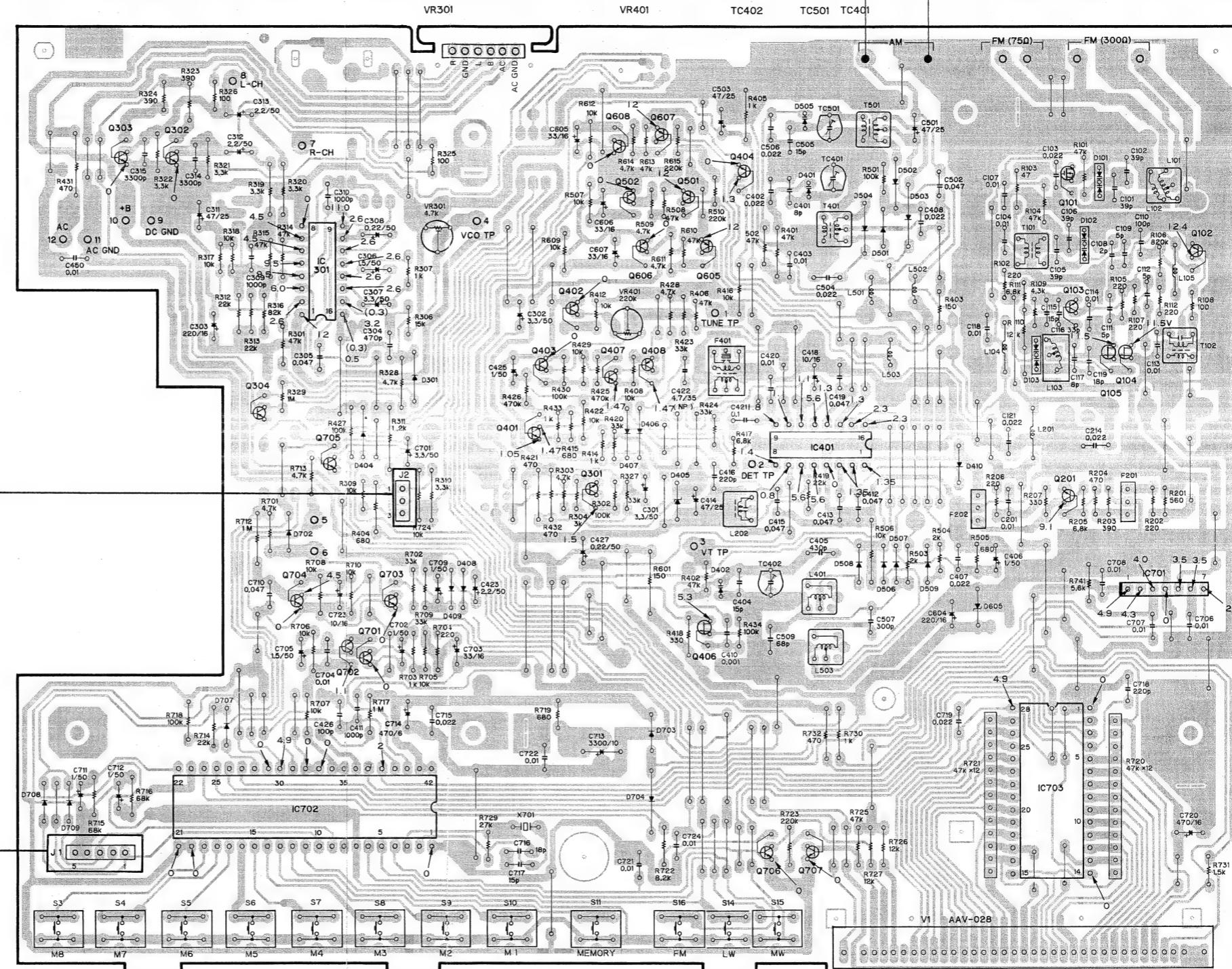


TUNER ASSEMBLY(GWE-270)

IC301 Q702  
Q303 Q302 IC702 Q304 Q704 Q705 Q701 Q703  
Q402 Q502 Q606 Q607 Q605 Q404  
Q401 Q403 Q301 Q407 Q408 Q501 Q406 Q706 Q707 IC401

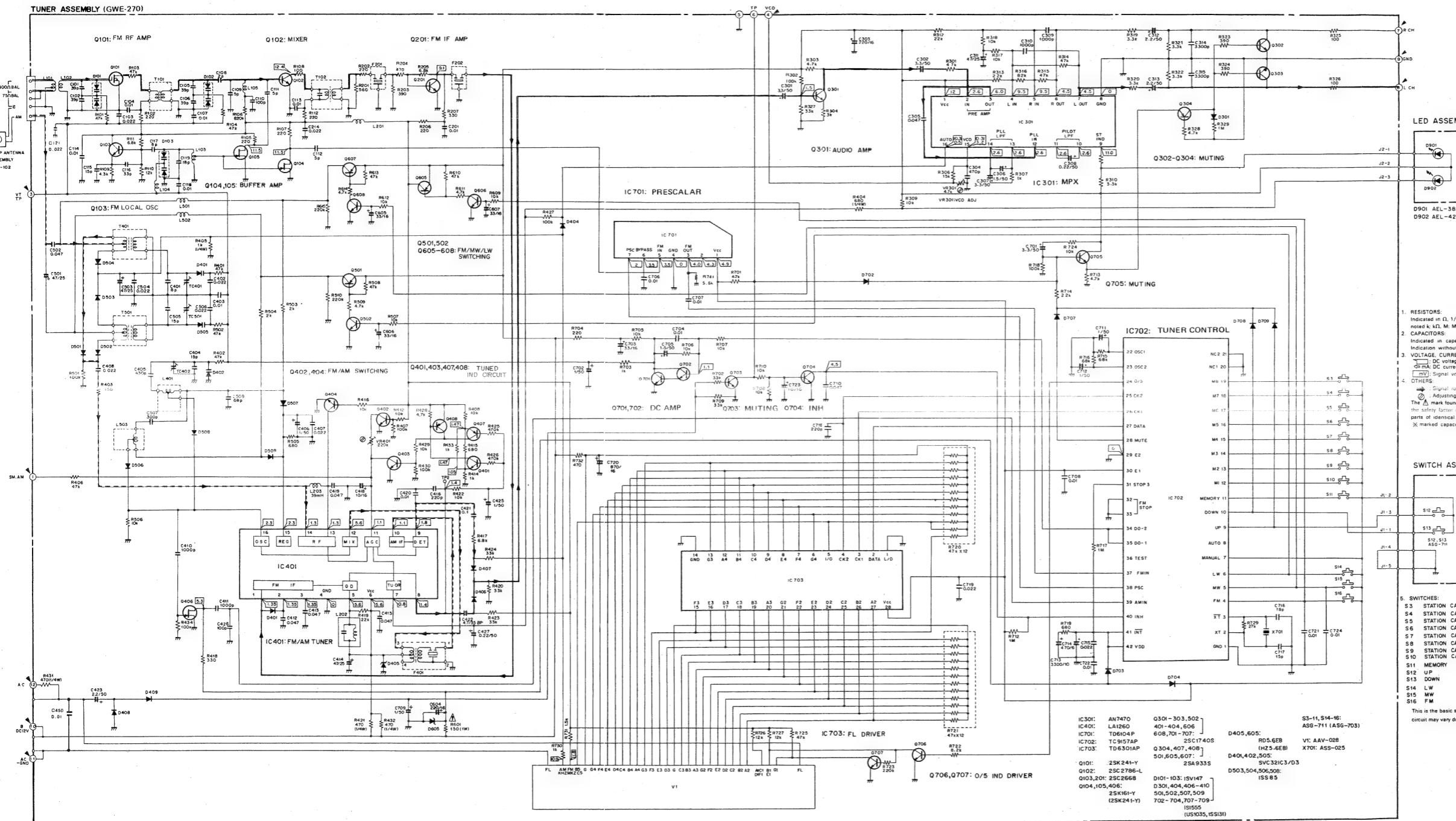
LOOP ANTENNA  
ASSEMBLY  
ATB-102

Q101 Q103 Q201 Q105  
IC703 IC701 Q102



IC301 : AN7470P (AN7470) IC401 : LA1260S IC701 : TD6104P IC702 : TC9157AP IC703 : TD6301AP  
Q304, 407, 408, 501, 605, 607 : 2SA933S  
D101~103 : ISV147 D301, 404, 406~410, 501, 502, 507, 509, 702~704, 707~709 : ISS131 (US1035)  
D401, 402, 505 : SVC321C3/D3 D405, 605 : RD5.6EB (HZ5.6EB) D503, 504, 506, 508 : MA859

## 10. SCHEMATIC DIAGRAM



A

B

C

D

## 11. ELECTRICAL PARTS LIST

## NOTES:

- When ordering resistors, first convert resistance values into code form as shown in the following examples.
  - Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).
- |      |                      |          |         |         |
|------|----------------------|----------|---------|---------|
| 560Ω | 56 × 10 <sup>1</sup> | 561..... | RDI/4PS | 5 1 J   |
| 47kΩ | 47 × 10 <sup>3</sup> | 473..... | RDI/4PS | 4 7 3 J |
| 0.5Ω | 0R5.....             | RN2H     | 0 R 5 K |         |
| 1Ω   | 010.....             | RS1P     | 0 1 0 K |         |

- Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).
- 5.62kΩ 562 × 10<sup>3</sup> 5621..... RNI/4SR 5 2 1 F

- The ▲ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★ GENERALLY MOVES FASTER THAN ★
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

## Miscellaneous Parts

SWITCHES					
Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
	Tuner assembly	GWE-270	★★	S3 – S11, S14 – S16 Tact switch (FUNCTION, MEMORY, STATION CALL)	ASG-711 (ASG-703)
	Switch assembly				
	LED assembly				

## Tuner assembly (GWE-270)

## SEMICONDUCTORS

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
★★ IC301		AN7470P (AN7470)	L401	AM OSC coil	ATB-100
★★ IC401		LA1260	L101	FM ANT coil	ATC-192
★★ IC702		TC9157AP	L102	FM ANT coil	ATC-193
★★ IC701		TD6104P	L103	FM OSC coil	ATC-214
★★ IC703		TD6301AP	L503	LW OSC coil	ATD-023
★★ Q304, Q407, Q408, Q501, Q605, Q607		2SA933S	L202	FM DET coil	ATE-072
★★ Q301 – Q303, Q401 – Q404, Q502, Q606, Q608, Q701 – Q707		2SC1740S	L501, L502	Inductor	ATH-108
★★ Q102		2SC2786-L	L203	Inductor	ATH-116
★★ Q103, Q201		2SC2668	L104, L105, L201	Inductor	ATH-049
★★ Q104, Q105, Q406		2SK161-Y (2SK241-Y)	T401	AM ANT transformer	ATB-099
★ Q101		2SK241-Y	T101	FM RF transformer	ATC-194
★ D503, D504, D506, D508		MA859	T501	LW ANT transformer	ATD-027
★ D405, D605		RD5.6EB (HZ5.6EB)	T102	FM matching transformer	ATE-063
★ D401, D402, D505		SVC321C3/D3	F202	FM ceramic filter	ATF-107
★ D301, D404, D406 – D410, D501, D502, D507, D509, D702 – D704, D707 – D709		1SS131 (US1035)	F201	FM ceramic filter	ATF-119
★ D101 – D103		1SV147	F401	AM ceramic filter	ATF-133

## CAPACITORS

Mark	Symbol & Description	Part No.
C713	(3300/10V)	ACH-389
TC401, TC402	Trimmer	ACM-015
TC501	Trimmer	ACM-020
C716		CCCH180J50 (CCDH180J50)
C509		CCCH680J50 (CCDH680J50)
C416, C718		CCCSL221J50 (CCDSL221J50)
C117, C401		CCDCH080D50
C115, C404, C505, C717		CCDCH150J50
C116		CCDCH330J50
C101, C102, C105, C106		CCDRH390J50
C108		CCDSL020C50
C109, C111, C112		CCDSL050C50
C110, C426		CCDSL101J50
C119		CCDT180J50
C422		CEANP4R7M35
C308, C427		CEASR22M50
C406, C425, C702, C709, C711, C712		CEAS10M50L
C306, C705		CEAS1R5M50
C418, C723		CEAS100M16
C312, C313, C423		CEAS2R2M50
C303, C604		CEAS221M16
C301, C302, C307, C701		CEAS3R3M50
C605 – C607, C703		CEAS30M16
C311, C414, C501, C503		CEAS470M25
C720		CEAS471M16
C714		CEAS471M6
C309, C310, C410, C411		CKCYB102K50 (CKDYB102K50)
C314, C315		CKCYB332K50 (CKDYB332K50)
C305, C412, C413, C419, C502, C710		CKCYF473Z50 (CKDYF473Z50)
C415		CKCYX473M25 (CKDYX473M25)
C104, C107, C113, C114, C118, C201, C403, C420, C450, C704, C706 – C708, C721, C722, C724		CKDYF103Z50
C103, C121, C214, C402, C407, C408, C504, C506, C715, C719		CKDYF223Z50
C421		CQMA104J50
C507		CQSA301J50
C405		CQSA431J50
C304		CQSA471J50

## RESISTORS

NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
★ VR401	Semi-fixed (220kΩ)	VRTB6VS224
★ VR301	Semi-fixed (4.7kΩ)	VRTB6VS472
▲ R601		RS1LMF151J
R720, R721		RA12S473J
R404, R405, R421, R431, R432		RD1/4PM□□J
Other resistors		RD1/8PM□□J
OTHERS		
Mark	Symbol & Description	Part No.
★ V1	Fluorescent tube	AAV-028
★ X701	Crystal resonator	ASS-025

## Switch Assembly

## SWITCHES

Mark	Symbol & Description	Part No.
★★ S12, S13	Tact switch (TUNING+, TUNING–)	ASG-711 (ASG-703)

## LED Assembly

## SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★ D901 LED		AEL-382
★ D902 LED		AEL-424

## 12. ADJUSTMENT

### FM Tuner Section Adjustment

- Connect up as indicated in Fig. 12-1.
- Press the FM key to set FM mode.

Note: Stereo modulation: Main 1 kHz L+R  $\pm$  68.25 Hz dev.  
Pilot 19 kHz  $\pm$  6.75 kHz dev.

Step No.	FM SG (1kHz $\pm$ 75kHz dev.)		F-X55ZL(BK) (F-X55ZL) tuned frequency display	Adjustment	
	Frequency (MHz)	Level (dB)		Adjustment location	Specifications
1	No input signal		87.5 MHz	—	Check pin 3 (3.4V $\pm$ 1.5V) of tuner assembly.
2			108.0 MHz	—	Check pin (8.7V $^{+2.5}_{-2.0}$ V) of tuner assembly.
3	98.0	20–30	98.0 MHz	T101, T102	Set the output from pin 1 of the tuner assembly to maximum level. (Before performing the adjustment of Step 3, turn VR401 fully counterclockwise.)
4	98.0	60	No modulation	98.0 MHz	L202
5	98.0	80		98.0 MHz	VR401
6	98.0	0		98.0 MHz	—
7	98.0	80	No modulation	98.0 MHz	VR301
	Stereo modulation (note)				Adjust the frequency at pin 4 of tuner assembly to 76kHz ( $\pm$ 150 Hz).
8	98.0	60	Stereo modulation (note)	98.0 MHz	T102
	Stereo modulation (note)				Minimize distortion in both left and right channel outputs (adjust T102 to within $\pm 90^\circ$ ).
9	98.0	Variable	Stereo modulation (note)	98.0 MHz	Confirm that the TUNED IND and STEREO IND light up when the level of FM SG is turned to high, and that the TUNED IND and STEREO IND light off when the level of the FM SG is turned to low.

### AM (MW) Tuner Section Adjustment

- Connect up as indicated in Fig. 12-2.
- Press the AM (MW) key to set AM (MW) mode.
- Set the AM CHANNEL STEP switch to the 9 kHz position. (F-X55Z(BK)/ZUC, Z model only)

Step No.	AM SG (400Hz, 30% modulation)		F-X55ZL(BK) (F-X55ZL) tuned frequency display	Adjustment		
	Frequency (kHz)	Level (dB)		Adjustment location	Specifications	
1	No input signal		531 kHz	L401	Set pin 3 of tuner assembly to 1.3V ( $\pm 0.1V$ ).	
2			1602 kHz	TC402	Set pin 3 of tuner assembly to 10.0V ( $\pm 0.3V$ ).	
3	Repeat steps 1 and 2 until both specification ratings are satisfied.					
4	603	40	603 kHz	T401	Set the output from pin 1 of the tuner assembly to maximum level.	
5	1395	40	1395 kHz	TC401		
6	Repeat steps 4 and 5 until both specification ratings are satisfied.					
7	1395	Variable	1395 kHz	Check that the TUNING indicator comes on when the AM SG level is gradually increased.		

### AM (LW) Tuner Section Adjustment (F-X55ZL(BK), F-X55ZL/ZEB model only)

- Connect up as indicated in Fig. 12-2.
- Press the AM (LW) key to set AM (LW) mode.

Step No.	AM SG (400Hz, 30% modulation)		F-X55ZL(BK) (F-X55ZL) tuned frequency display	Adjustment	
	Frequency (kHz)	Level (dB)		Adjustment location	Specifications
1	No input signal		281 kHz	L503	Set pin 3 of tuner assembly to 5.2V ( $\pm 0.1V$ ).
2			164 kHz	T501	Set the output from pin 1 of the tuner assembly to maximum level.
3	254	40	254 kHz	TC401	
4	Repeat steps 2 and 3 until both specification ratings are satisfied.				

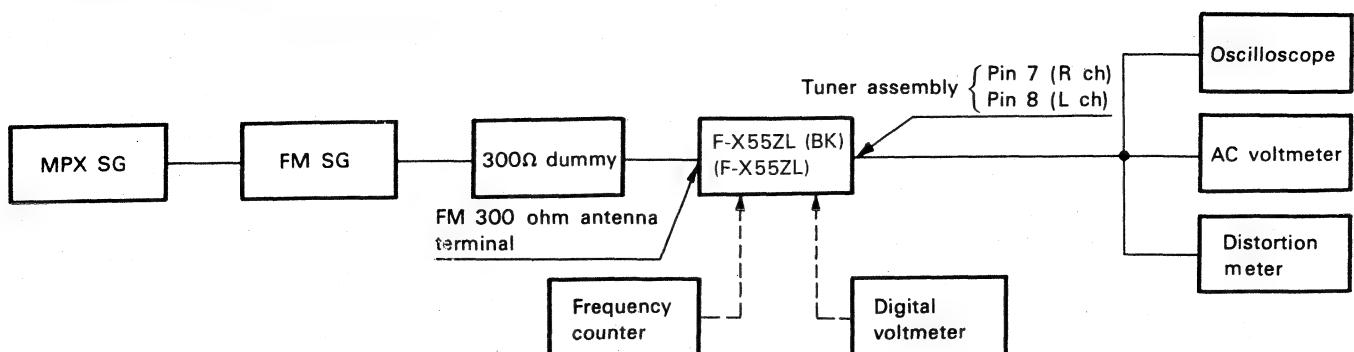


Fig. 12-1 FM adjustment connection diagram

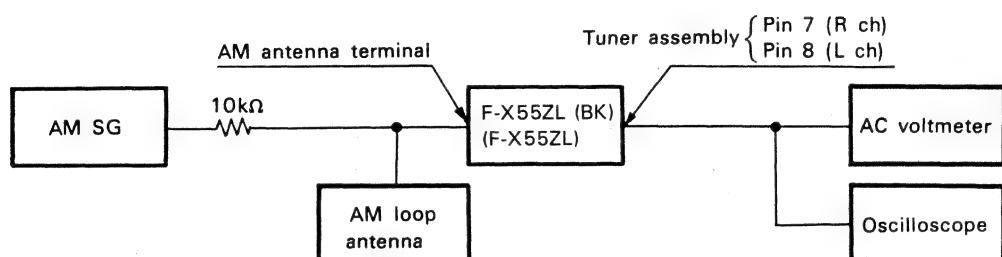


Fig. 12-2 AM adjustments connection diagram

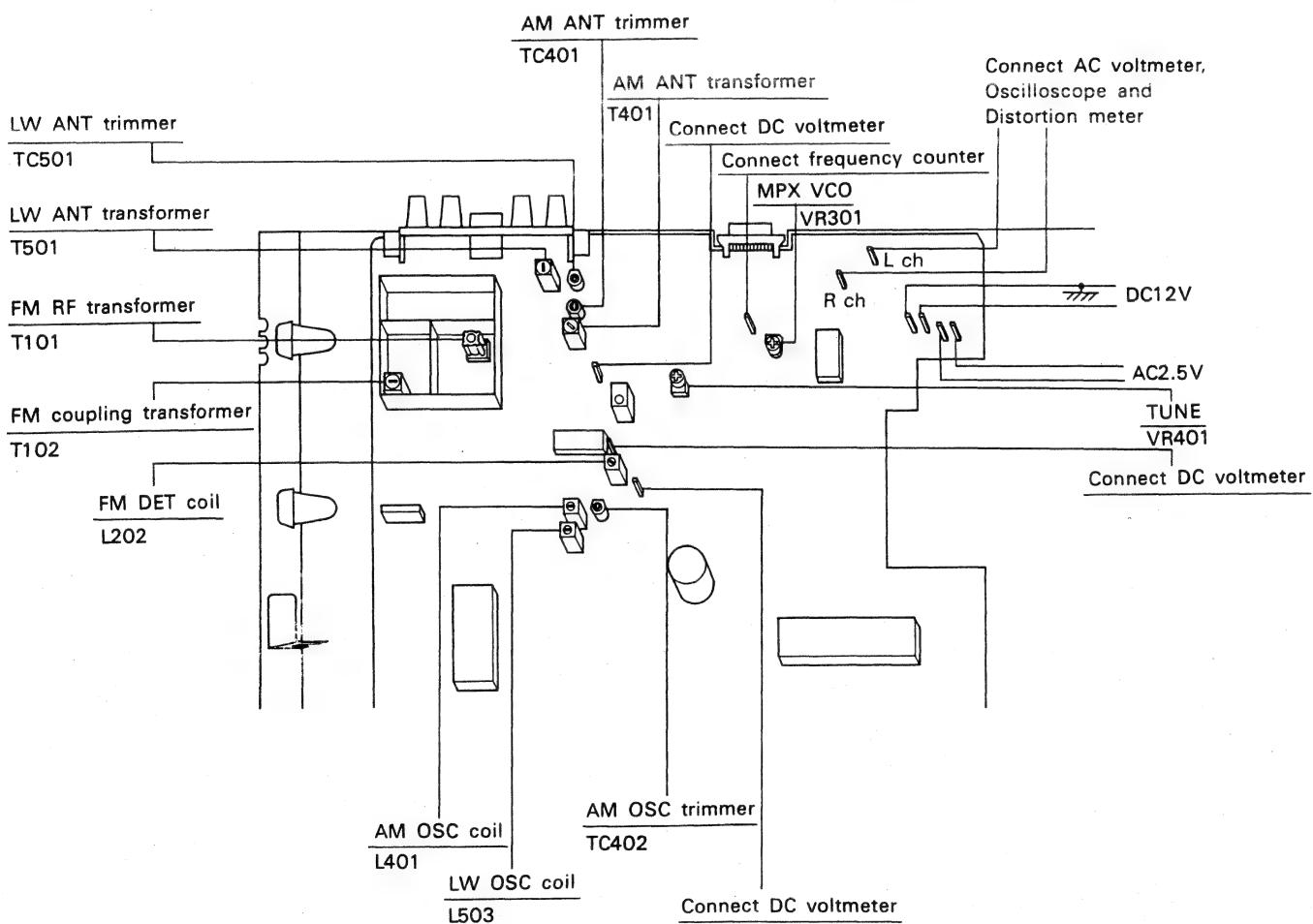


Fig. 12-3 Adjustment positions

## 12. RÉGLAGE

### Réglage de la partie syntoniseur MF

- Faire les raccordements comme indiqué en Fig. 12-1.
- Enfoncer la touche MF pour régler en mode MF.

Note: Modulation stéréo: Principal 1kHz L+R±68,25kHz dév.  
Pilote 19kHz±6,75kHz dév.

Etape N°	FM SG (1kHz ± 75kHz dév.)		Affichage de fréquence syntonisée F-X55ZL(BK) (F-X55ZL)	Réglage	
	Fréquence (MHz)	Niveau (dB)		Lieu de réglage	Caractéristiques
1	Pas de signal d'entrée		87,5 MHz	—	Vérifier la fiche 3 (3,4V±1,5V) de l'ensemble syntoniseur.
2			108,0 MHz	—	Vérifier la fiche 3 (8,7V <sup>+2,5</sup> <sub>-2,0</sub> V) de l'ensemble syntoniseur.
3	98,0	20 à 30	98,0 MHz	T101, T102	Régler la puissance de la fiche 1 de l'ensemble syntoniseur au niveau maximal. (Avant d'effectuer le réglage de l'Etape 3, tourner VR401 à fond dans le sens horaire inversé)
4	98,0	60	98,0 MHz	L202	Régler la fiche 2 de l'ensemble syntoniseur à 1,4V(±0,01V).
5	98,0	80	98,0 MHz	VR401	Set pin 1 of tuner assembly to 1,1V (±0,01V).
6	98,0	0	98,0 MHz	—	Vérifier si la fiche 1 de l'ensemble syntoniseur est endessous de 0,8V.
7	98,0	80	98,0 MHz	VR301	Régler la fréquence de la fiche 4 de l'ensemble syntoniseur à 76 kHz (±150 Hz).
8	98,0	60	98,0 MHz	T102	Réduire la distorsion dans les sorties des deux canaux droit et gauche (régler T102 à ±90°).
9	98,0	Variable	98,0 MHz		Confirmer que le TUNED IND et le STEREO IND s'allument lorsque le niveau de FM SG est syntonisé trop haut, et que le TUNED IND et STEREO IND sont éteints lorsque le niveau de FM SG est syntonisé trop bas.

### Réglage de la partie syntoniseur MA (MW)

- Faire les raccordements comme indiqué en Fig. 12-2.
- Enfoncer la touche MA (MW) pour régler en mode MA (MW).
- Régler le commutateur MA CHANNEL STEP en 9ème position. (F-X55Z(BK)/ZUC, seulement modèle Z)

Etape N°	AM SG (400Hz, 30% modulation)		Affichage de fréquence syntonisée F-X55ZL(BK) (F-X55ZL)	Réglage	
	Fréquence (kHz)	Niveau (dB)		Lieu de réglage	Caractéristiques
1	Pas de signal d'entrée		531 kHz	L401	Régler la fiche 3 de l'ensemble syntoniseur à 1,3V (±0,1V).
2			1602 kHz	TC402	Régler la fiche 3 de l'ensemble syntoniseur à 10,0V (±0,3V).
3	Répéter les Etapes 1 et 2 jusqu'à ce que les taux nominaux préconisés soient atteints.				
4	603	40	603 kHz	T401	Régler la puissance de la fiche 1 de l'ensemble syntoniseur au niveau maximal.
5	1395	40	1395 kHz	TC401	
6	Répéter les Etapes 4 et 5 jusqu'à ce que les taux nominaux préconisés soient atteints.				
7	1395	Variable	1395 kHz		Vérifier si l'indicateur TUNING s'allume lorsque le niveau de AM SG augmente graduellement.

### Réglage de la partie syntoniseur MA (LW) (F-X55Z(BK), F-X55ZL/ZEB unique)

- Faire les raccordements comme indiqué en Fig. 12-2.
- Enfoncer la touche MA (LW) pour régler en mode MA (LW).

Etape N°	AM SG (400Hz, 30% modulation)		Affichage de fréquence syntonisée F-X55ZL(BK) (F-X55ZL)	Réglage	
	Fréquence (kHz)	Niveau (dB)		Lieu de réglage	Caractéristiques
1	Pas de signal d'entrée		281 kHz	L503	Régler la fiche 3 de l'ensemble syntoniseur à 5,2V (±0,1V).
2	164	40	164 kHz	T501	Régler la puissance de la fiche 1 de l'ensemble syntoniseur au niveau maximal.
3	254	40	254 kHz	TC401	
4	Répéter les Etapes 2 et 3 jusqu'à ce que les taux préconisés soient atteints.				

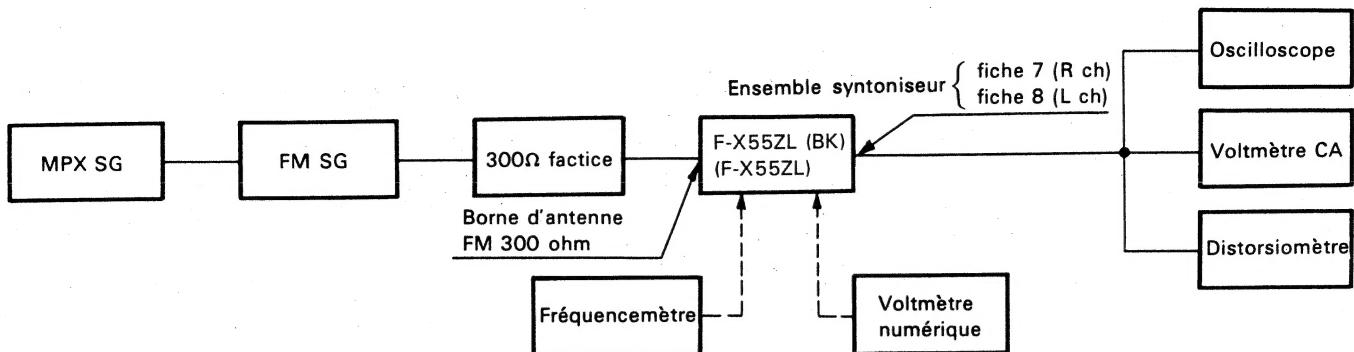


Fig. 12-1 Diagramme de raccordement de réglage MF

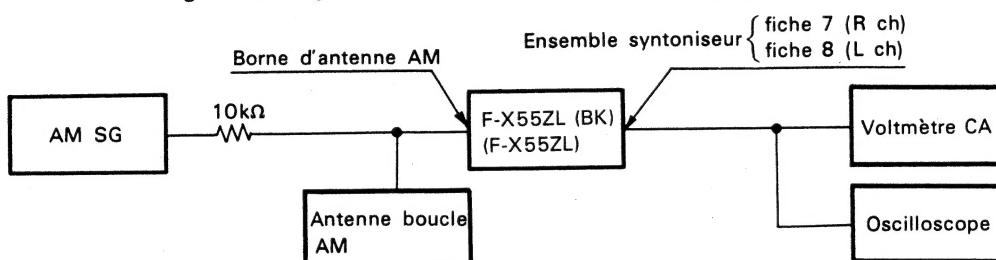


Fig. 12-2 Diagramme de raccordement de réglage MA

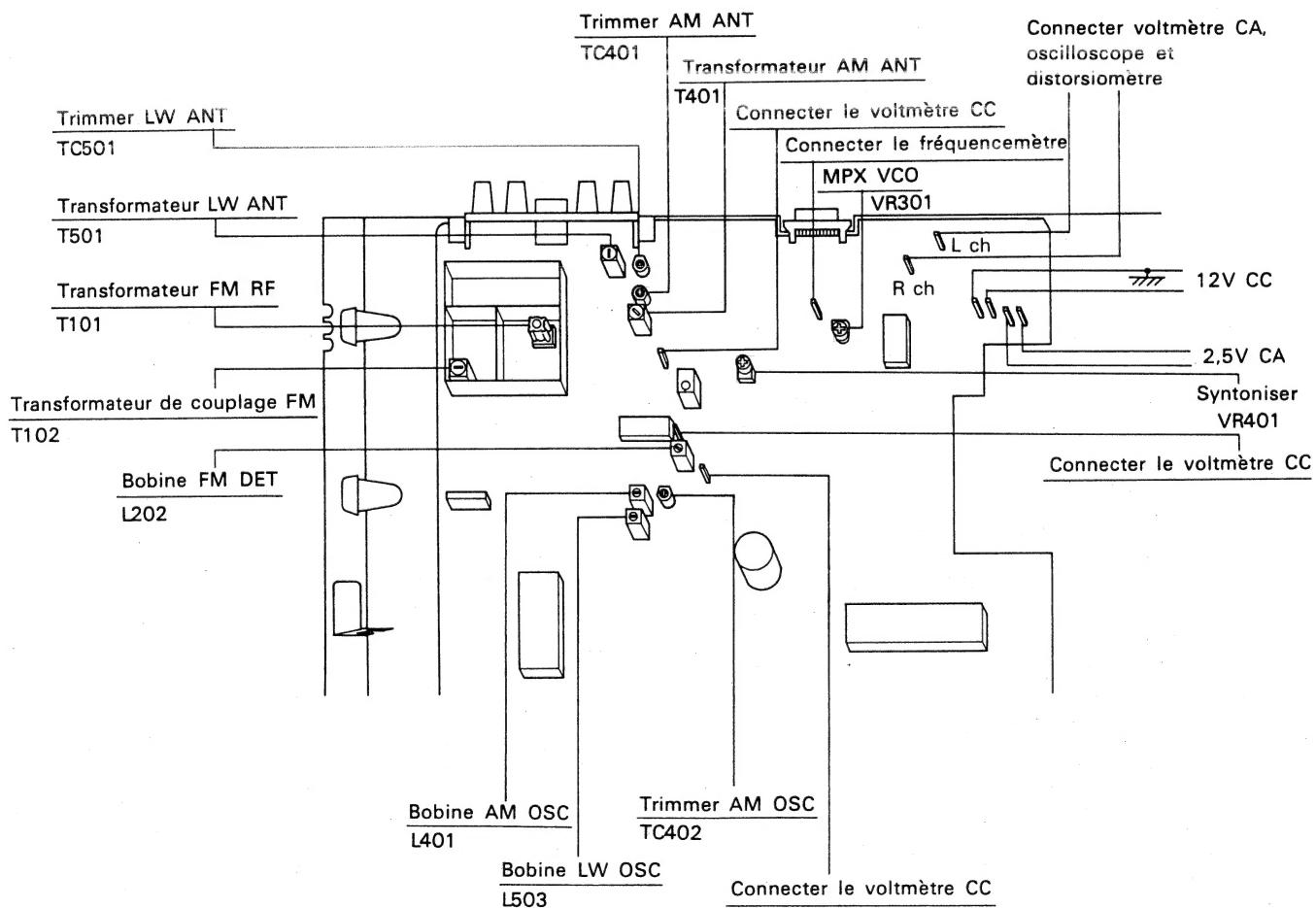


Fig. 12-3 Position de réglage

## 12. AJUSTE

### Ajuste de la sección del sintonizador de FM

- Conecte como es indicado en la Fig. 12-1.
- Oprima la tecla de FM para fijar el modo de FM.

Nota: Modulación estereo: Principal 1 kHz L+R±68,25 kHz dev.  
Piloto 19 kHz ± 6,75 kHz dev.

No. de paso	FM SG (1kHz ± 75kHz dev.)		Visualización de frecuencia sintonizada F-X55ZL(BK) (F-X55ZL)	Lugar de ajuste	Ajuste
	Frecuencia (MHz)	Nivel (dB)			Especificaciones
1	No hay señal de entrada		87,5 MHz	—	Inspeccione la patilla 3 del conjunto del sintonizador (3,4V ± 1,5V).
2			108,0 MHz	—	Inspeccione la patilla 3 del conjunto del sintonizador (8,7V <sup>+2,5</sup> <sub>-2,0</sub> V).
3	98,0	20 a 30	98,0 MHz	T101, T102	Fije la salida de la patilla 1 del conjunto del sintonizador al máximo nivel. (Antes de efectuar ajuste del paso 3, gire VR401 completamente en contra del sentido de las manecillas del reloj).
4	98,0	60	98,0 MHz	L202	Fije la patilla 2 del conjunto del sintonizador a 1,4V (± 0,01V).
5	98,0	80	98,0 MHz	VR401	Fije la patilla 1 del conjunto del sintonizador a 1,1V (± 0,01V).
6	98,0	0	98,0 MHz	—	Inspeccione la patilla 1 del conjunto del sintonizador que esta abajo de 0,8V.
7	98,0	80	98,0 MHz	VR301	Ajuste la frecuencia en la patilla 4 del conjunto del sintonizador a 76 kHz (± 150 Hz).
8	98,0	60	98,0 MHz	T102	Reducza la distorsión tanto en la salida del canal izquierdo como en la del derecho (ajuste T102 a dentro de ± 90°)
9	98,0	Variable	98,0 MHz		Confirme que se enciendan el IND STEREO y el IND TUNED cuando el nivel de FM SG es girado a alto, y que los anteriores IND STEREO y IND TUNED se apagan cuando el nivel de FM SG es girado a bajo.
Modulación estereo (Nota)					

### Ajuste de la sección del sintonizador de AM (MW)

- Conecte como es indicado en la Fig. 12-2.
- Oprima la tecla AM (MW) para fijar el modo AM (MW).
- Fije el interruptor de AM CHANNEL STEP (paso de canal de AM) a la posición de 9 kHz. (F-X55Z(BK)/ZUC, sólo el modo Z)

No. de paso	AM SG (400Hz, 30% modulation)		Visualización de frecuencia sintonizada F-X55ZL(BK) (F-X55ZL)	Lugar de ajuste	Ajuste
	Frecuencia (kHz)	Nivel (dB)			Especificaciones
1	No hay señal de entrada		531 kHz	L401	Fije la patilla 3 del conjunto del sintonizador a 1,3V (± 0,1V).
2			1602 kHz	TC402	Fije la patilla 3 del conjunto del sintonizador a 10,0V (± 0,3V).
3	Repita los pasos 1 y 2 hasta que ambos valores nominales especificados sean satisfechos.				
4	603	40	603 kHz	T401	Fije la salida de la patilla 1 del conjunto del sintonizador al máximo nivel.
5	1395	40	1395 kHz	TC401	
6	Repita los pasos 4 y 5 hasta que ambos valores nominales especificados sean satisfechos.				
7	1395	Variable	1395 kHz		Inspeccione que el indicador de TUNING (sintonización) se encienda cuando se aumenta gradualmente el nivel de AM SG.

### Ajuste de la sección del sintonizador de AM (LW). (F-X55ZL(BK), F-X55ZL/ZEB sólo)

- Conecte como es indicado en la Fig. 12-2.
- Oprima la tecla AM (LW) para fijar el modo AM (LW).

No. de paso	AM SG (400Hz, 30% modulation)		Visualización de frecuencia sintonizada F-X55ZL(BK) (F-X55ZL)	Lugar de ajuste	Ajuste
	Frecuencia (kHz)	Nivel (dB)			Especificaciones
1	No hay señal de entrada		281 kHz	L503	Fije la patilla 3 del conjunto del sintonizador a 5,2V (± 0,1V).
2			164 kHz	T501	Fije la salida de la patilla 1 del conjunto del sintonizador al máximo nivel.
3	254	40	254 kHz	TC401	
4	Repita los pasos 2 y 3 hasta que ambos valores nominales especificados sean satisfechos.				

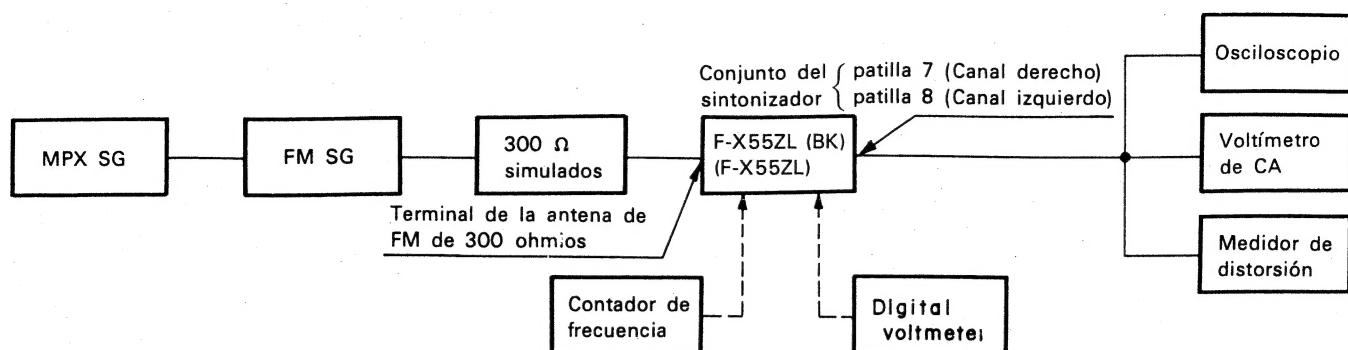


Fig. 12-1 Diagramma de conexión de ajuste de FM

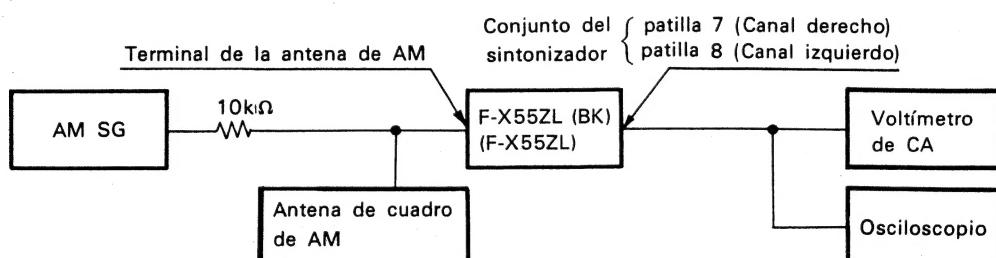


Fig. 12-2 Diagramma de conexión de ajuste de AM

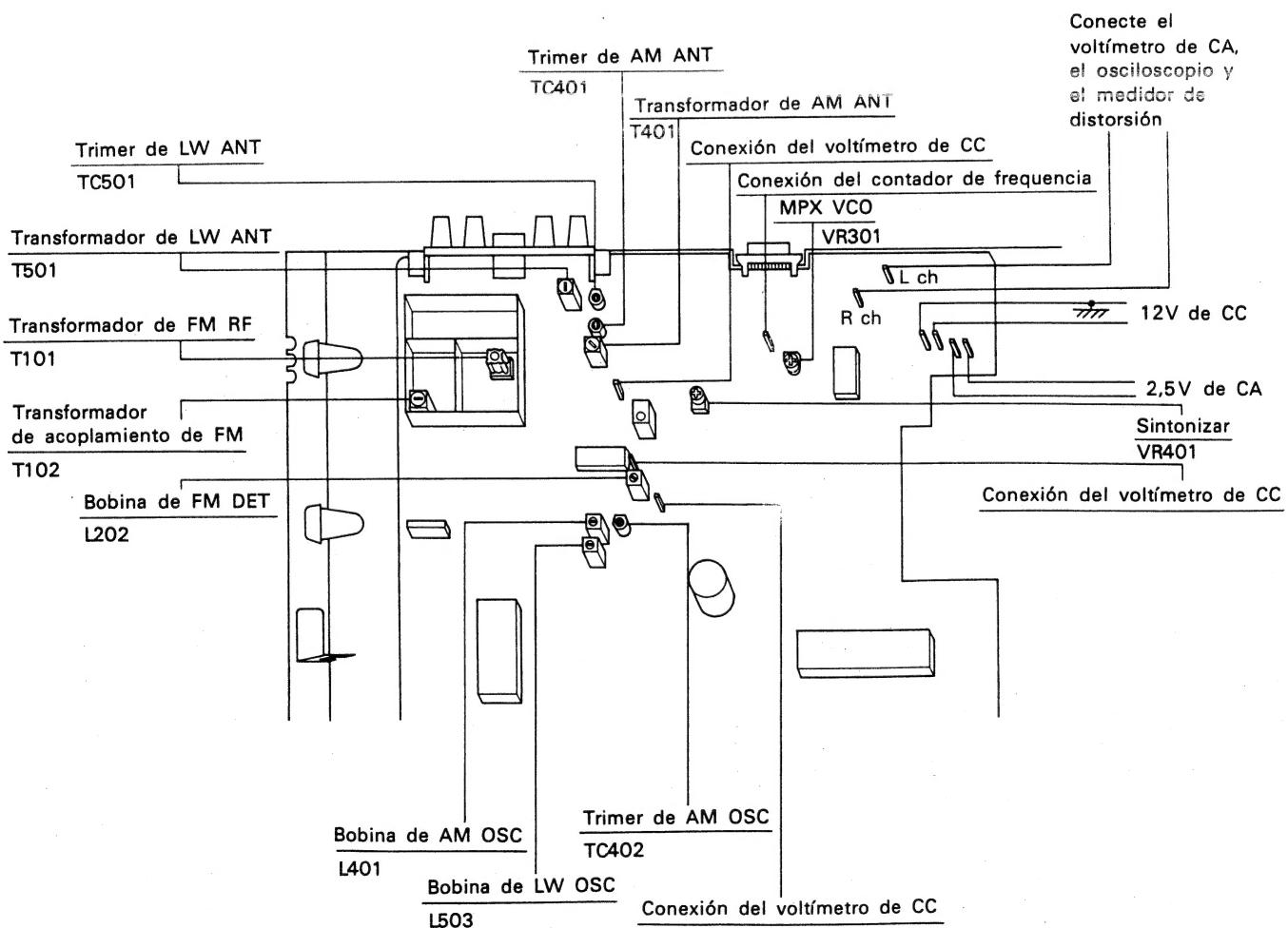


Fig. 12-3 Puntos de ajuste